Posture Scale Analyzer

QPS-200

The posture Scale Analyzer is part of the Posture Analyzer system that include:

1. Posture Scale Analyzer
2. Posture Vision
3. Posture Screen
4. PSA Board (optional)
5. PSA Cushion (Optional)
6. PSA Cart (Optional)

Posture Scale Analyzer

The Posture Scale Analyzer consist of the following components:

1. Quadruple section force plate.
2. CD with PSA + PV software and user manual
3. Operation Manuals PSA + PV (hard copy)
4. Power Supply
5. Serial communication cable to PC.

Note: For some of new Laptop models that have no serial port, USB to serial adaptor is required.

Posture Scale Analyzer

INTRODUCTION

The Posture Scale Analyzer system consists of four electronic weighing plates, connected to a standard desk PC or laptop.

The system requirements:

1. Operating system - Windows 98 (or up)
2. Processor - Pentium II (or up)
3. Memory - at list 64Mb

Posture Scale Analyzer

PSA – Installation Instructions:

1. Place the scale on a leveled and stable surface.
2. Connect the power supply to a socket on the scale
3. Connect the serial port cable to connector on the scale.
4. Connect the other end of the serial port cable to the computer's serial port.
5. Plug the power supply into the electricity socket.
   Make sure the red LED by the power supply socket is on

Make sure the power supply cable and the communication cable do not touch the scale's surface.

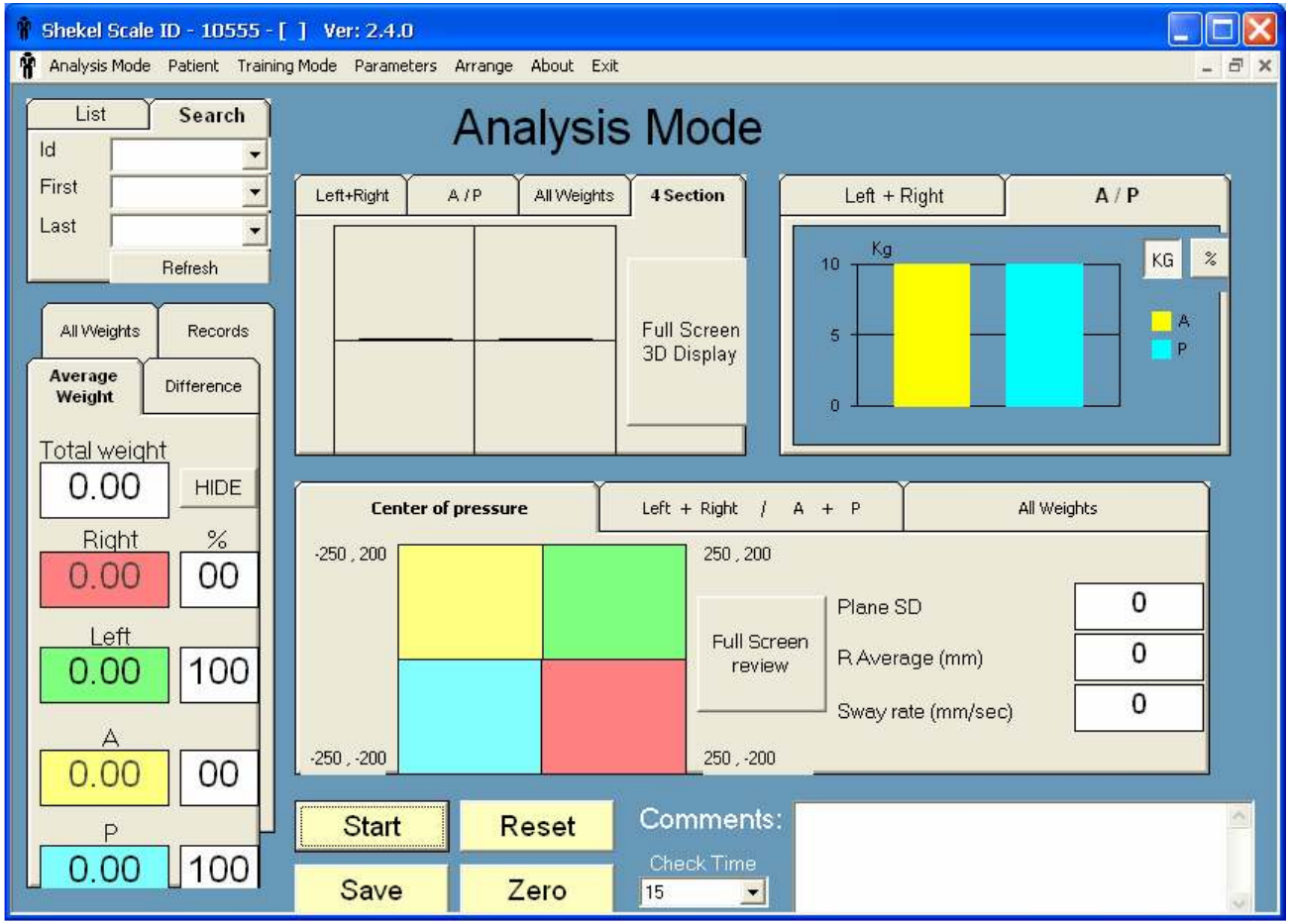
Posture Scale Analyzer

SOFTWARE - Installation Instructions:

1. Insert the CD into the driver.
2. Enter the ‘My Computer’ icon and then into the CD driver.
3. Double click Setup and complete the setup process according to the instructions.
4. Click ‘Start’ and then click ‘All Programs’; click the ‘Posture Scale Analyzer’ icon and drag it to your desktop and create a shortcut.

Getting to know the PSA software

Starting – Double click the icon [PostureScaleAnalyzer] on your computer's desktop.



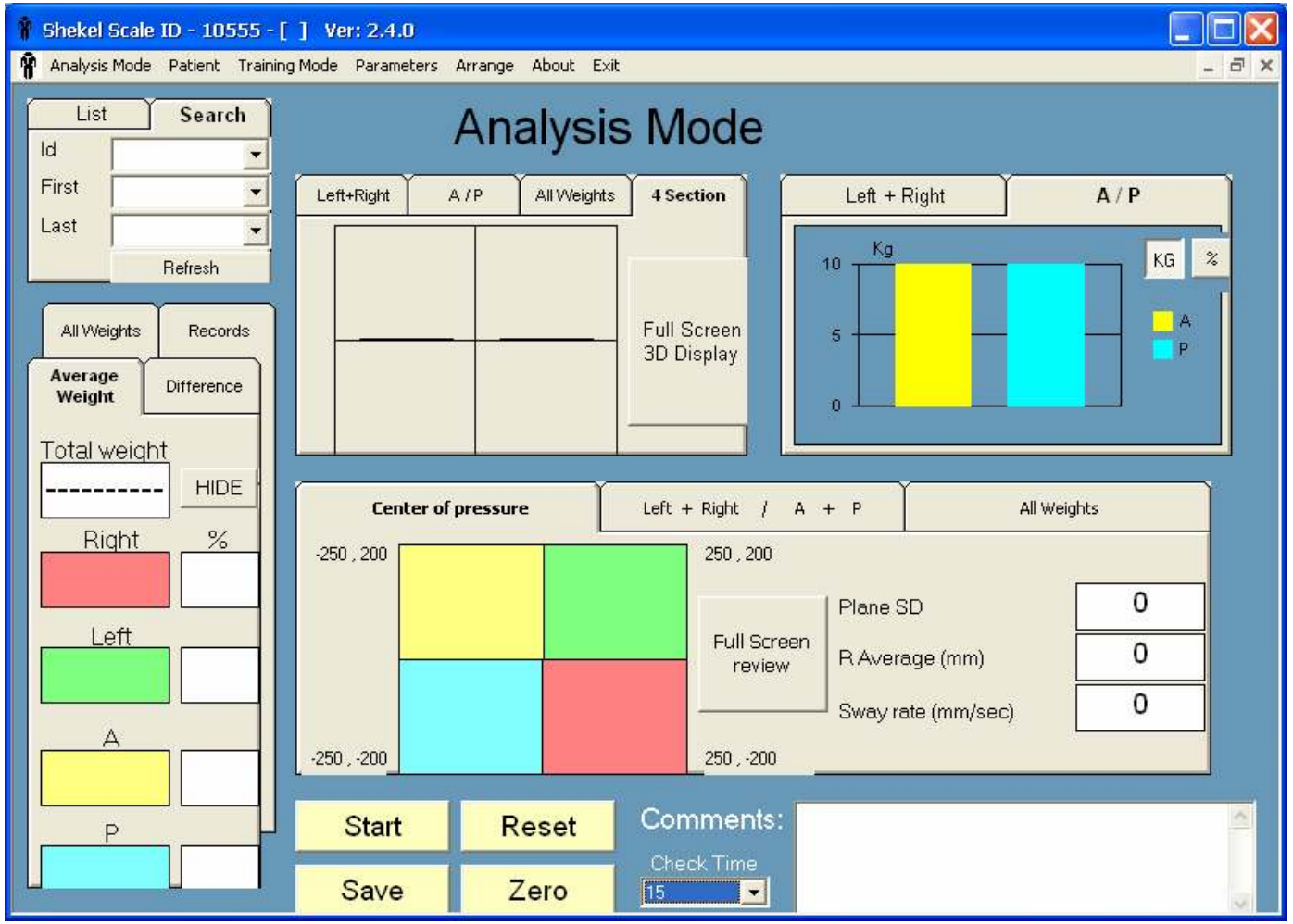
The screen with 0.00 or any x.xx digits in "Total weight" indicates the PSA is properly operating.

Then:
Skip to screen No. # 9

Otherwise:
continue to the next screen.

Communication Failure

The screen with "----------" in "Total weight" indicates there is no communication with scale.



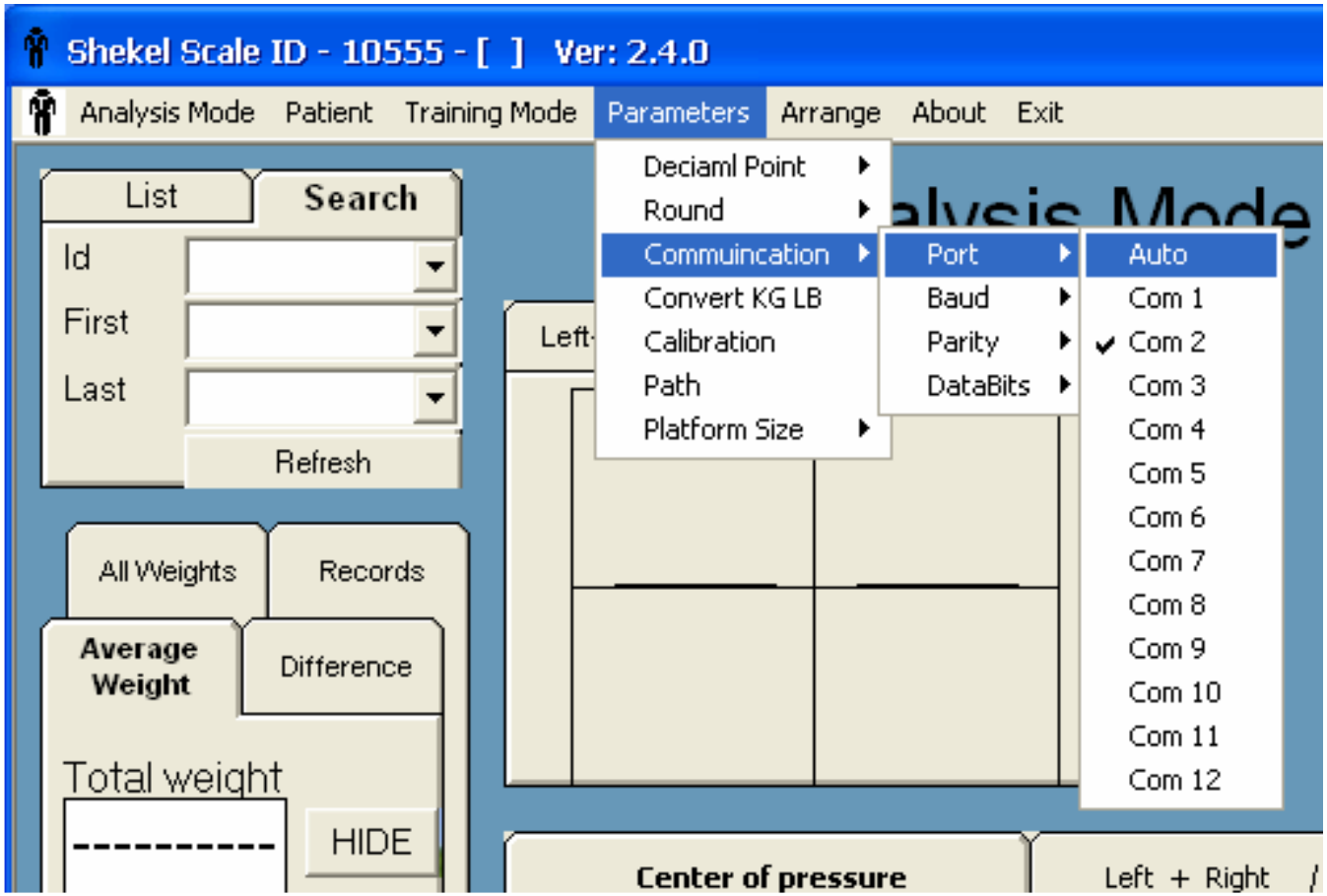
The red LED next to cord plug should lit. If not, check the connection of the adapter to the mains and to the scale.

Check the communication cable is firmly connected on both sides.

For further troubleshooting: continue to the next screen.

Communication Setting

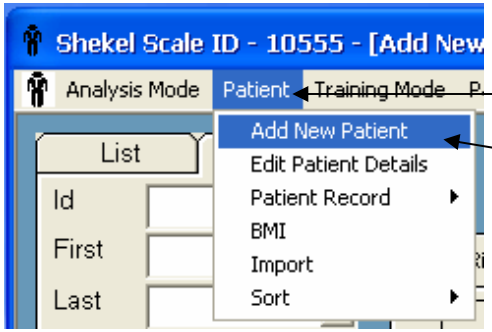
1. Click on [Parameter] from the main menu on the top.
2. Scroll down to [Communication]- an additional menu will open
3. Choose [Port]- you will see a list of optional port numbers
4. Click on [Auto]- the software will look for the appropriate port number.
5. Wait for the software to scroll through the different numbers, and then close the software.



6. Reopen the software- communication Should be now established.
7. If not, close software, switch OFF and ON the scale and open the software again.
8. If still no communication, contact MIDOT for technical support.

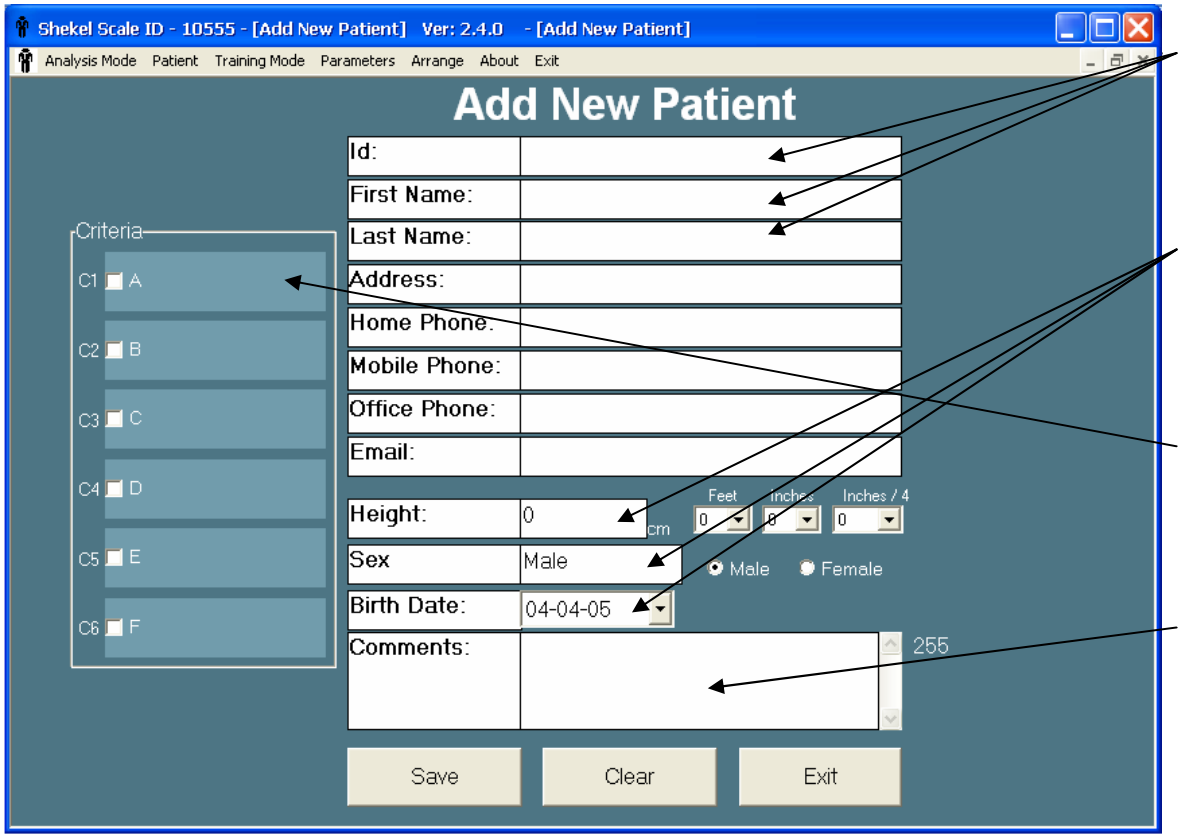
Warning: Do not perform Calibration .

Add New Patient



To add a new patient to the data base click [Patient], then click [Add New Patient].

The new screen show blank patient card.



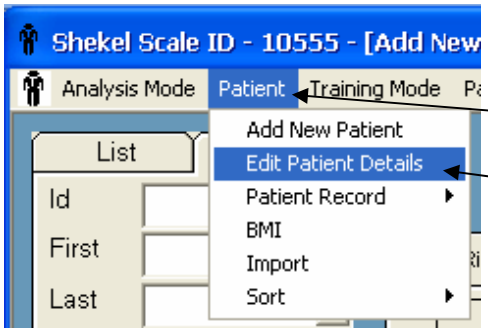
1. To add new patient, fill in at least the ID, First Name and Last Name, and click [Exit].

2. For statistical analysis it is recommended to add Height, Gender, Birth date and Criteria.

4. Criteria – You specify up to 6 criteria to classify patient for statistical analysis.

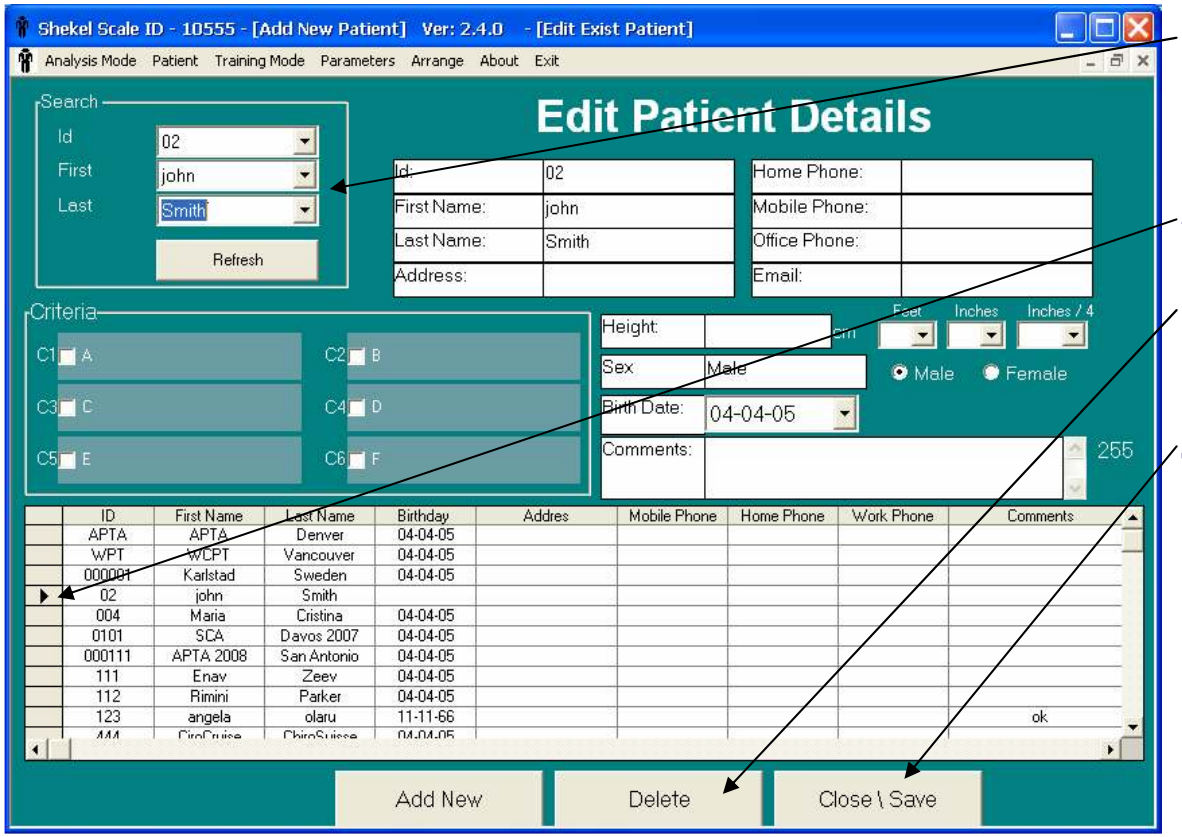
6. You can add a comments of up to 255 characters.

Edit Patient Details



To edit details of existing patient click [Patient], then click [Edit Patient Details].

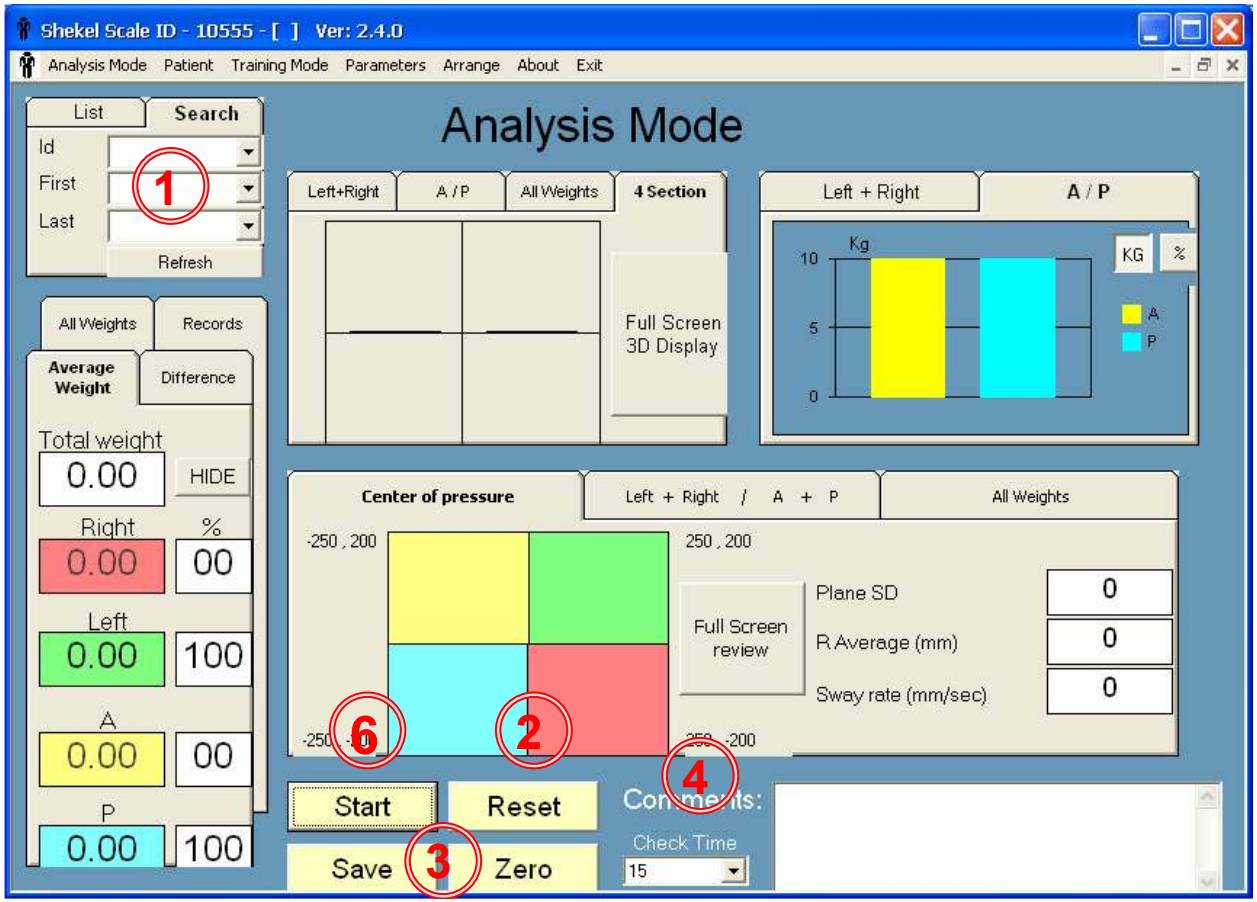
The new screen show the first patient in the patient's list.



1. **Retrieve the patient card, choose from list, patient's ID number, or first name or a last name, Or choose from the list.**
2. **Edit patient's details**
3. **To Delete a Patient's Card retrieve the patient's card and click [Delete].**
4. **To save the changes click [Close/Save].**

Testing Patient

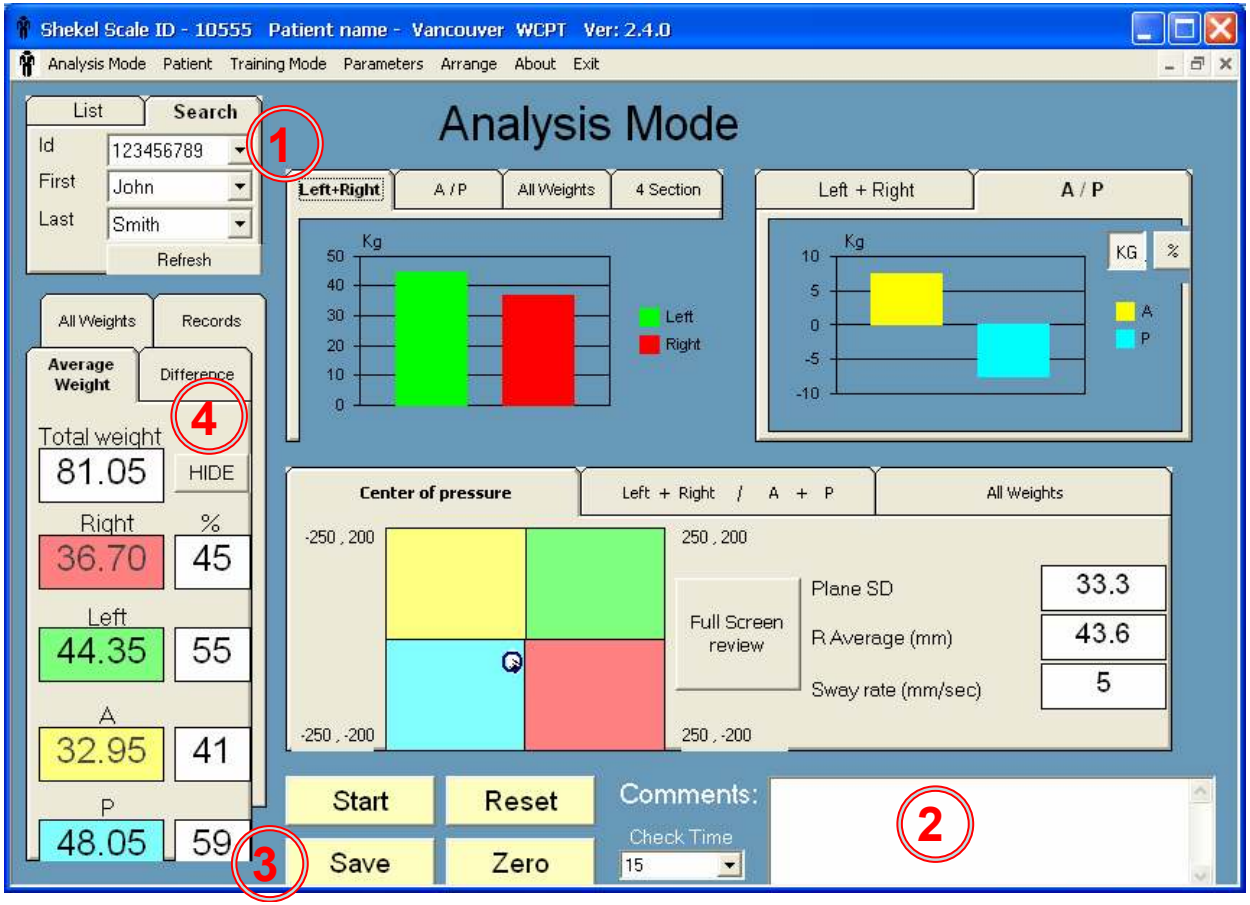
1. Choose a patient name either by ID, first name or Last name, at the left top of the screen. If the patient is new, follow the instruction in the previous section.
2. Click the [Reset] button at the bottom of the display to clear all previous data.
3. Zero the Scale – If the weight value at Total Weight is not zero, key [Zero].
4. [Check Time] – choose the test time (5-60 Sec.), 15-20 sec is recommended.



5. Ask the patient to mount the scale according to the following instructions:
   5.1 The patient should place the feet or shoes according to the drawing on the weighing plates – centered in the appropriate size. Only forward – backward position is important.
   5.2 The patient should stand naturally, hands beside the body, and look straight forward to point in the level of eyes.
6. Click [Start] to begin test.

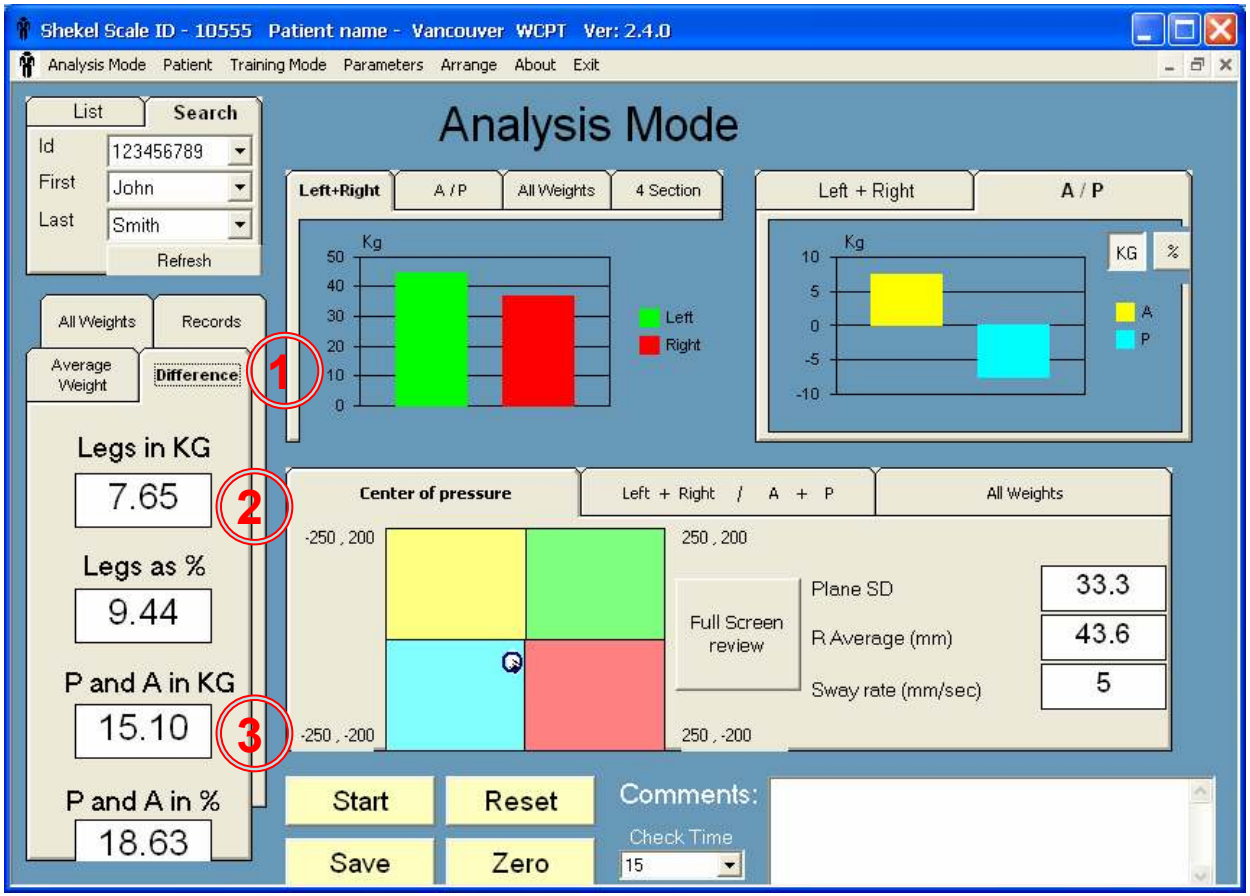
Test Analysis – Weight distribution – Average Weight

1. **Patient Name - Verify the name of the patient under test.**
2. **Comments – Add comments specifically to this test.**
3. **Save – To save the test to patient record click [Save].**
4. **Average Weight – indicates the total weight of the patient (Kg or Lbs) and:**
   - **4.1 Total weight distributed between Left & Right in weight units and % of body mass.**
   - **4.2 Total weight distributed between A & P in weight units and % of body mass**



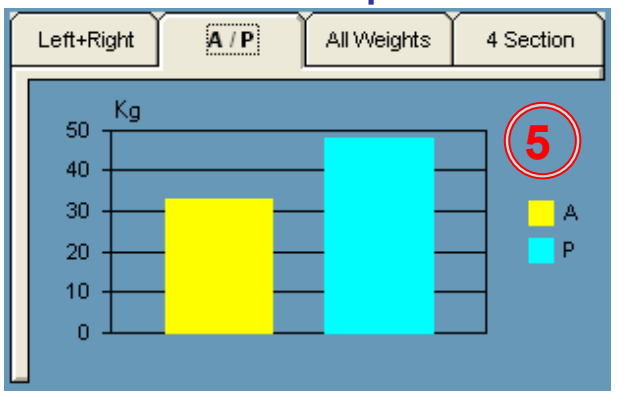
Test Analysis – Weight distribution- Differences

1. **Differences – Indicates the differences in weight distribution.**
2. **Legs – Indicates the lateral weight distribution between left and right in Kg (Lbs) and in %.**
3. **A&P – Indicates the A&P weight distribution between Anterior and Posterior in Kg (Lbs) and in %.**
4. **The Graph indicates the weight distribution between left and right in Kg (Lbs).**
5. **The Graph indicates the weight distribution between Anterior and Posterior in Kg (Lbs).**



Left & Right Graph

A / P Graph

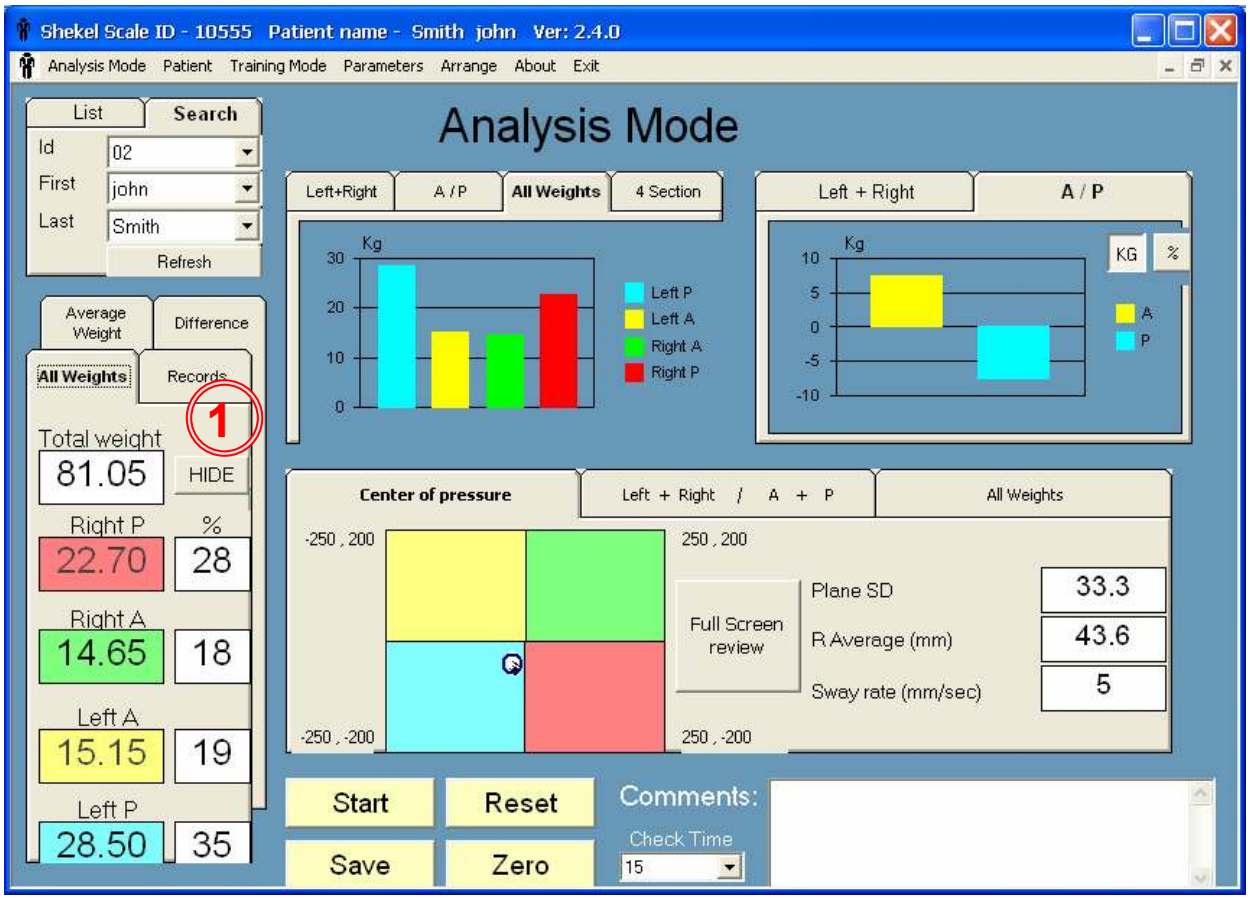


Test Analysis – Weight distribution- All Weights

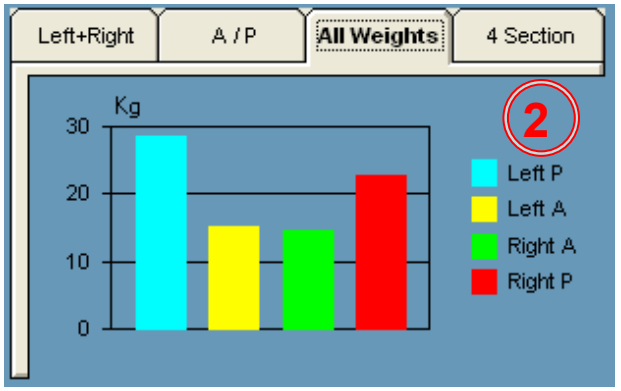
1. All weights – Indicates the weight distribution of the four sections of he platform.

in Kg (Lbs) and in % of the body mass: Left Anterior, Left Posterior, Right Posterior, Right Anterior.

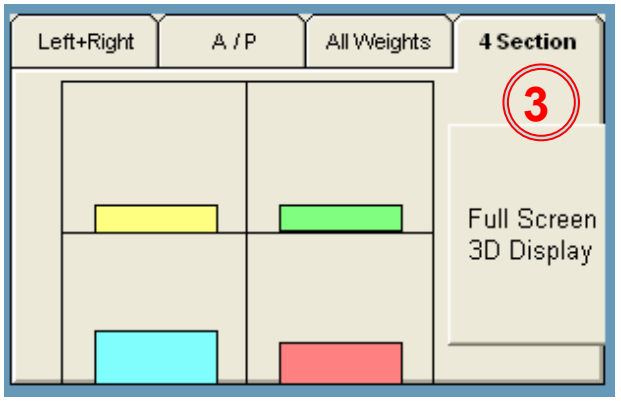
2-3. Graphs 2 and 3 show graphically the weight distribution of the four sections of he platform.



All weights Graph



4 Sections Graph



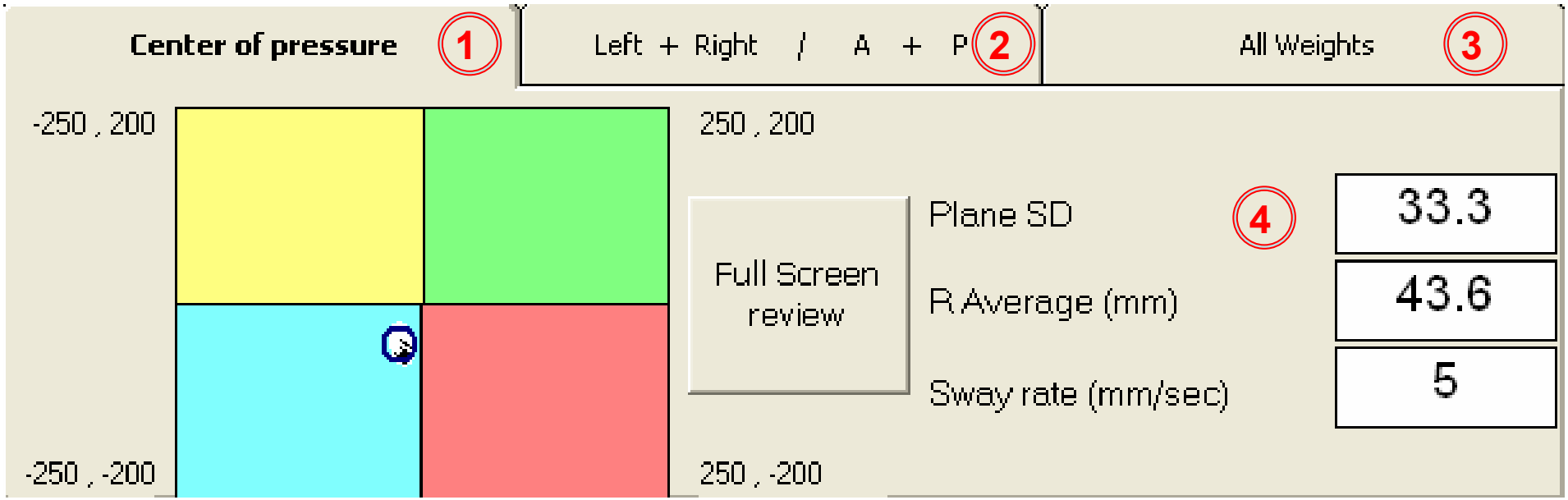
Test Analysis – Graphical and Numerical presentation

1. **Center of pressure – Analyze the sampling of center of pressure and indicate the weight distribution, the amplitude and rate of sway and the stability of patient. To see COP key [Full Screen review].**
2. **Show graphically the sway and the weight distribution of Left-Right and A-P during the test.**
   To see this screen key [Right + Left / A + P] and then [Full Screen] to enlarge the screen.
3. **Show graphically the sway and the weight distribution of the four quads during the test.**
   To see this screen key [All weights] and then [Full Screen] to enlarge the screen.
4. **Show the numerical test results of the following:**

   4.1 Plan SD - The dispersion of the COP on the X-Y plane. Combines the L-R SD and the A-P SD into one figure.

   4.2 R Average - The distance of the average point from the center of the platform

   4.3 Sway rate - The average speed of movement of the center of pressure



Test Analysis – Left + Right / A + P Graph

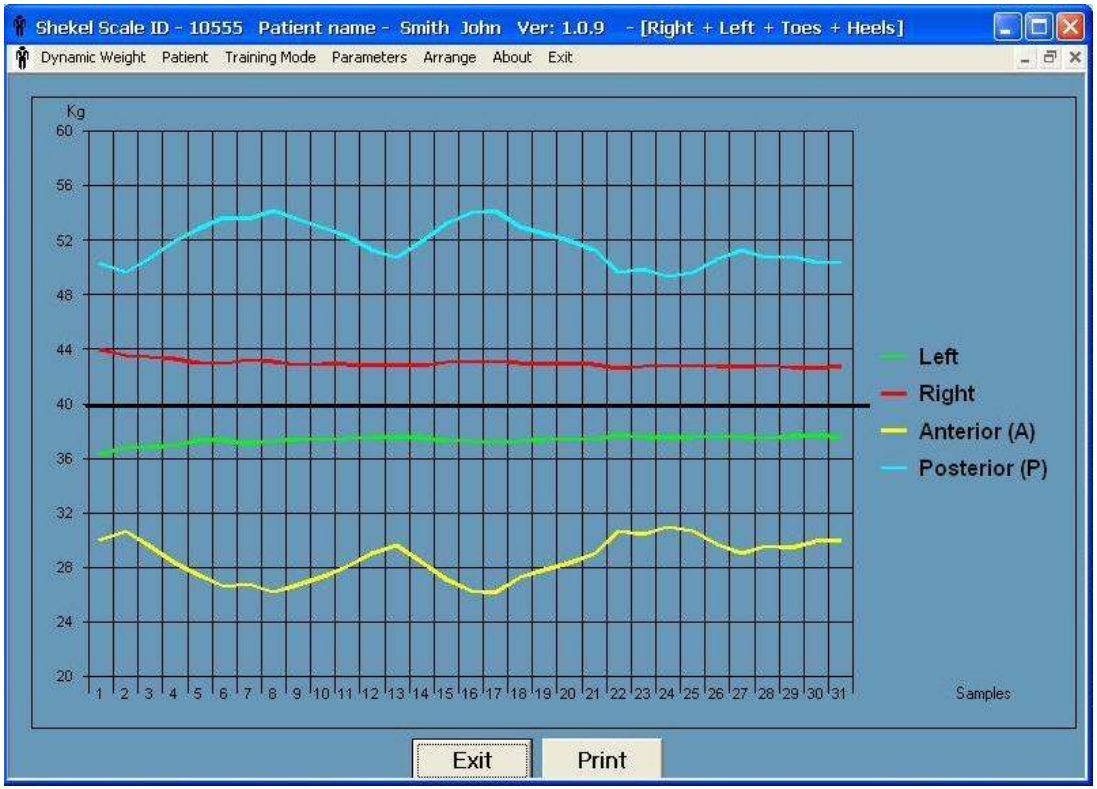
The Graph show the sway and the weight distribution of the total weight during the test proceeding from left to right. The sampling rate is about 2 samples/sec. The X axis show samples and Y axis show weight in Kg (Lbs).

The Red and Green lines indicate Right and Left respectively.

The Yellow and Blue lines indicates the Anterior and Posterior respectively.

The black line is the Even line. The distance of the various lines from this line indicates the imbalance level.

The curvature of the lines indicates the Sway level and stability of the patient.



Test Analysis – All Weights Graph

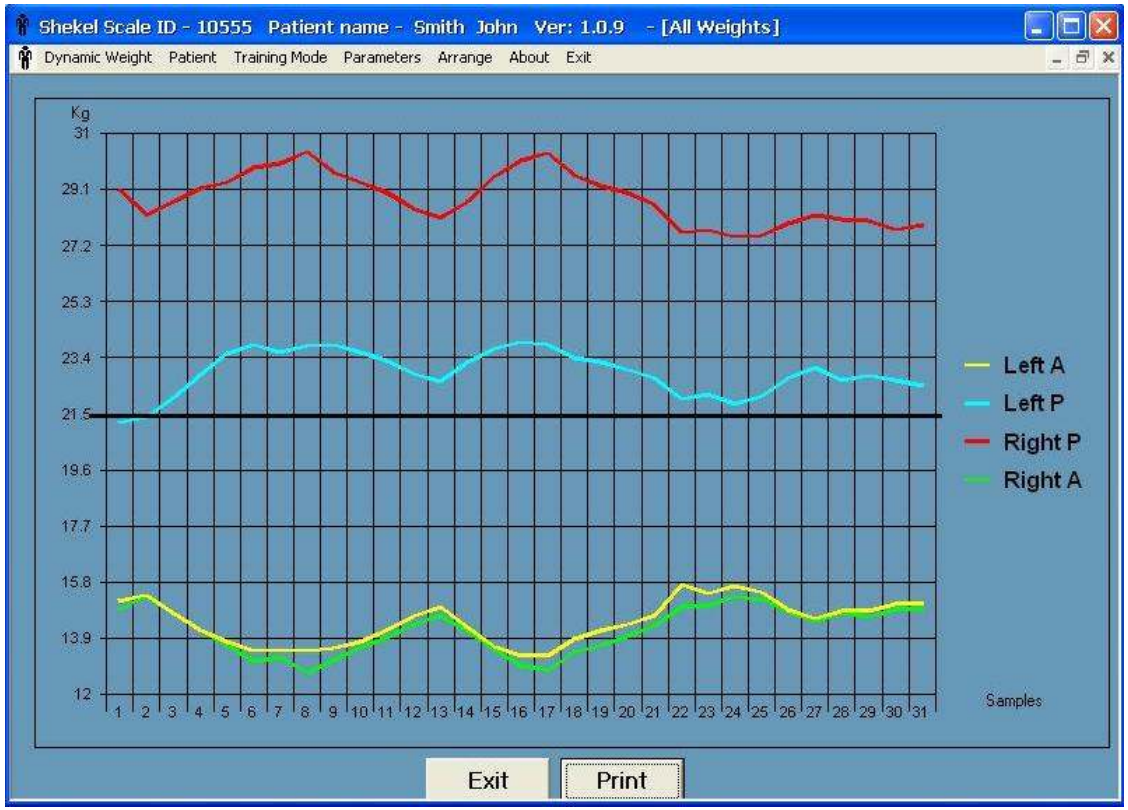
The Graph show the sway and the weight distribution of the total weight during the test proceeding from left to right. The sampling rate is about 2 samples/sec. The X axis show samples and Y axis show weight in Kg (Lbs). The four lines show the weight of the four section (quads).

The Yellow shows Left Anterior. The Blue shows Left Posterior.

The Red shows Right Posterior. The Green shows Right Anterior.

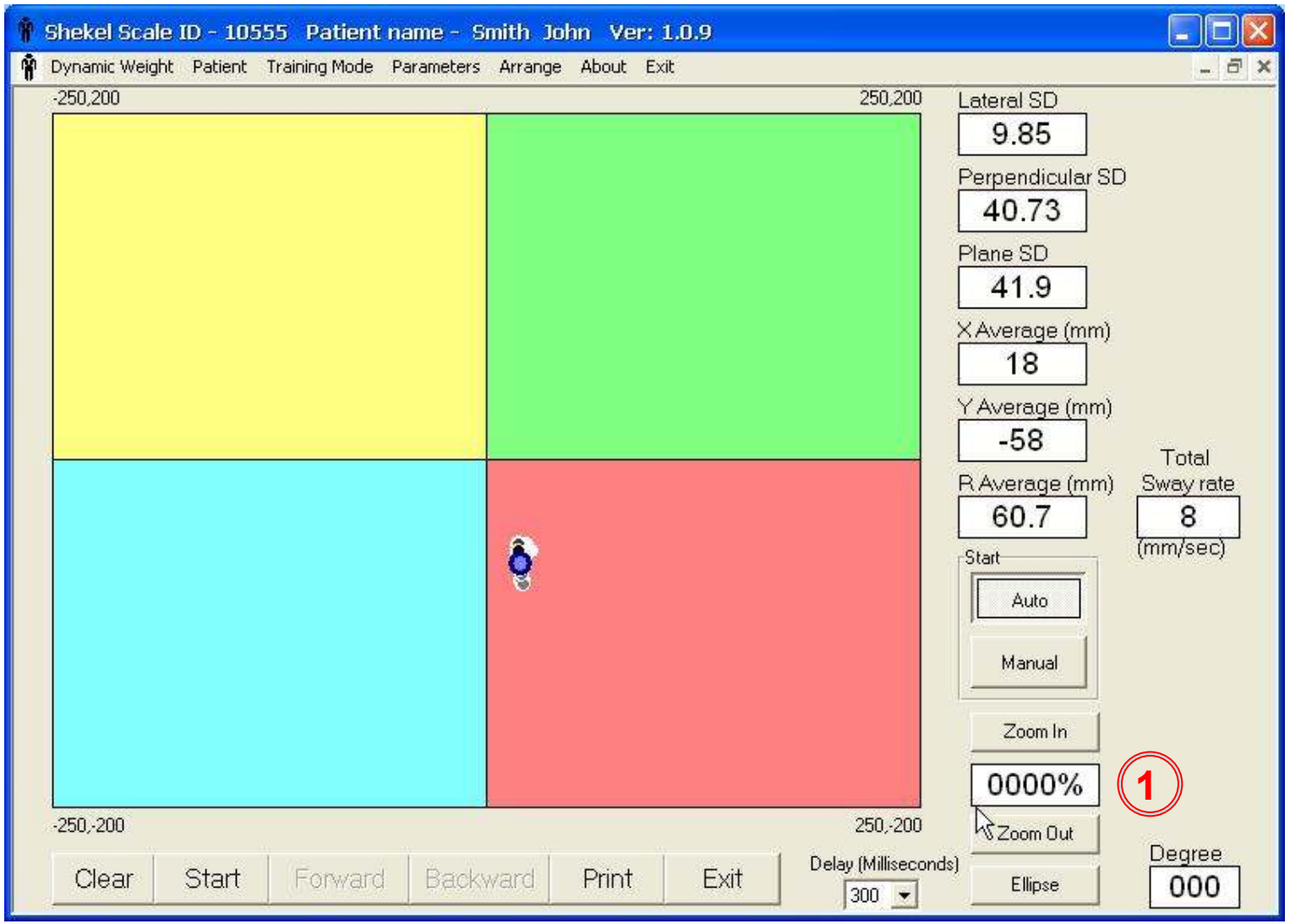
The black line is the Even line. The distance of the various lines from this line indicates the imbalance level.

The curvature of the lines indicates the Sway level and stability of the patient.



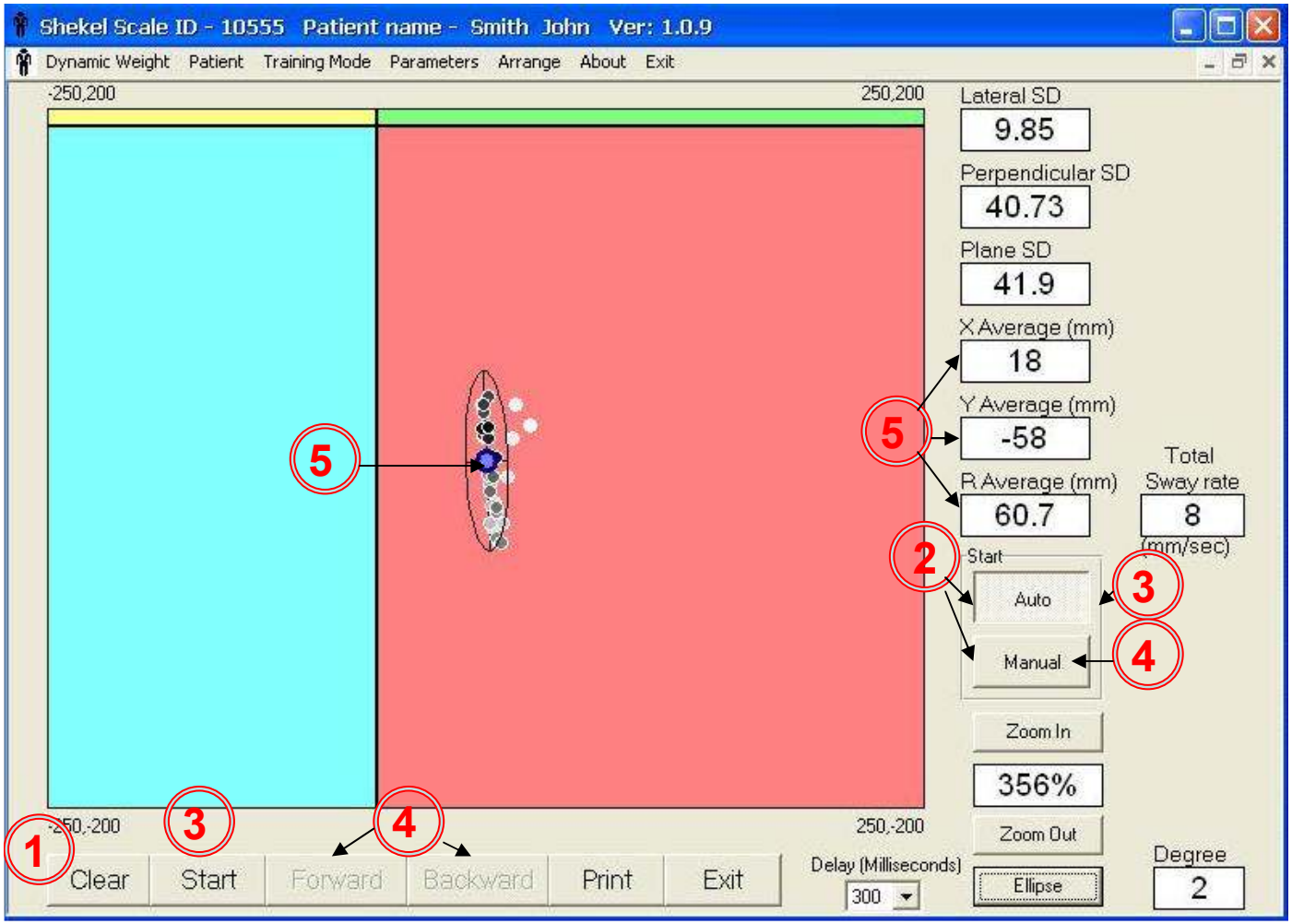
Test Analysis – Center of Pressure

1. **Zoom In / Zoom Out – For enlargement of the screen to show clearly the sampling of the Center of Pressure of Pressure (COP) dispersion during the test. The value in % indicates the scale up of the screen. To zoom in key the [Zoom In] and press ENTER on the keyboard.**



Center of Pressure - Rerun Test

1. **Clear – key [Clear] to clear the screen.**
2. **Start – Choose rerun mode – Auto or Manual.**
3. **When [Auto] is depressed the test will run automatically from beginning to end. You can set the speed of the rerun by changing the value under Delay (milliseconds) and key [Start].**
4. **When [Manual] is depressed the test can be rerun manually – each dot at a time.**
   [Forward] for the next dot, or [backward] to go one step



5. Average Point – The blue point indicates the average point of all COP points sampled during the test.

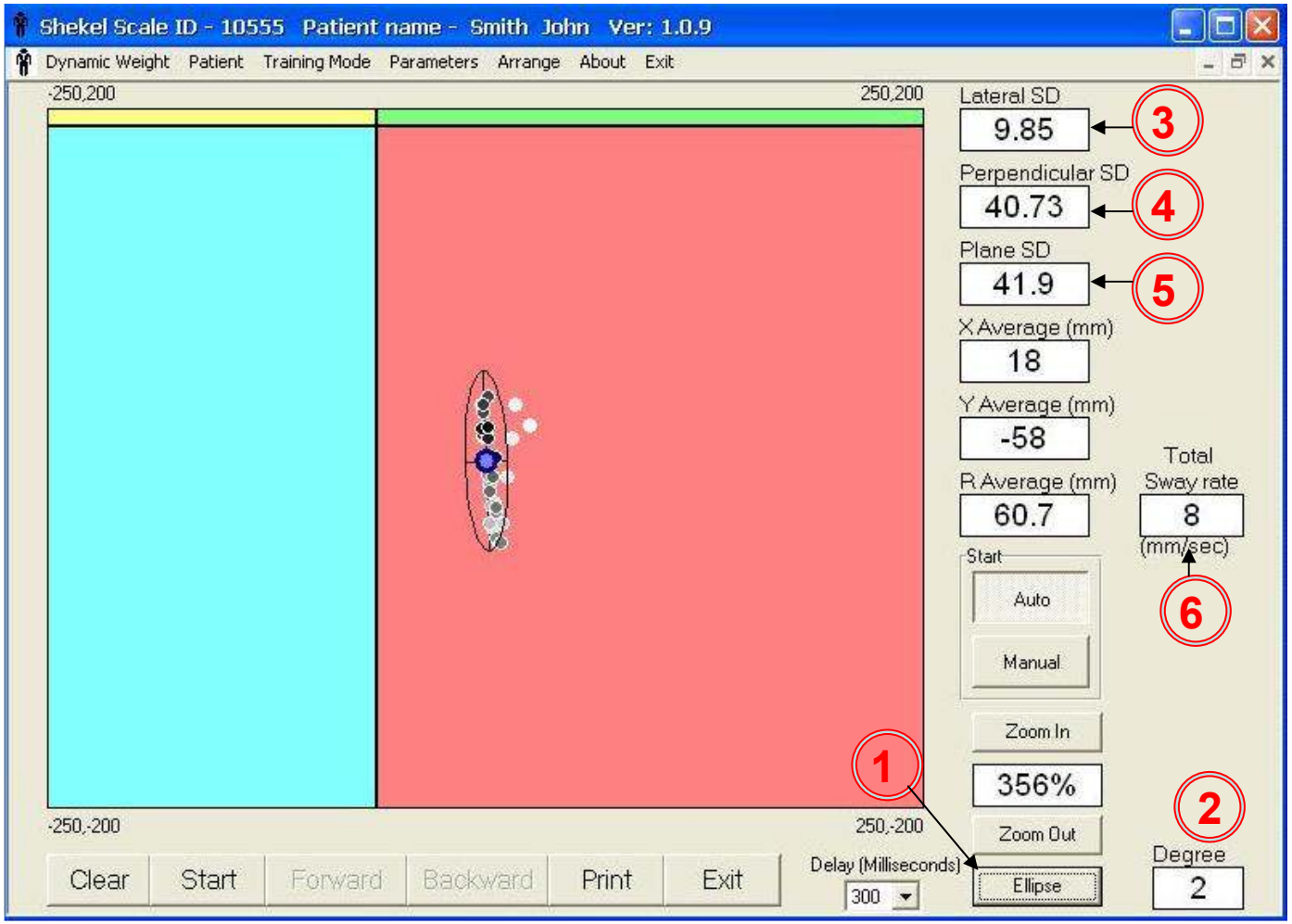
X Average - The position of the average point on the X axis in mm.

Y Average - The position of the average point on the Y axis in mm.

R Average - The distance of the average point from the center of the platform in mm.

Center of Pressure – The Ellipse

1. **Ellipse – Presents the dispersion of the COP samples on the X-Y plane. The ellipse is created by the values of the lateral SD and the perpendicular SD.**
2. **Degree – the long axis of the ellipse indicates the main direction of the sway.**
3. **Lateral SD - The dispersion of the center of pressure between left and right**
4. **Perpendicular SD - The dispersion of the COP between the anterior and the posterior.**



5. Plane SD – The dispersion of the COP on the X-Y plane. Combines the lateral SD and the perpendicular SD into one figure.

6. Total Sway Rate – The average speed of movement of the center of pressure

The size and the shape of the ellipse indicates the stability of the patient.

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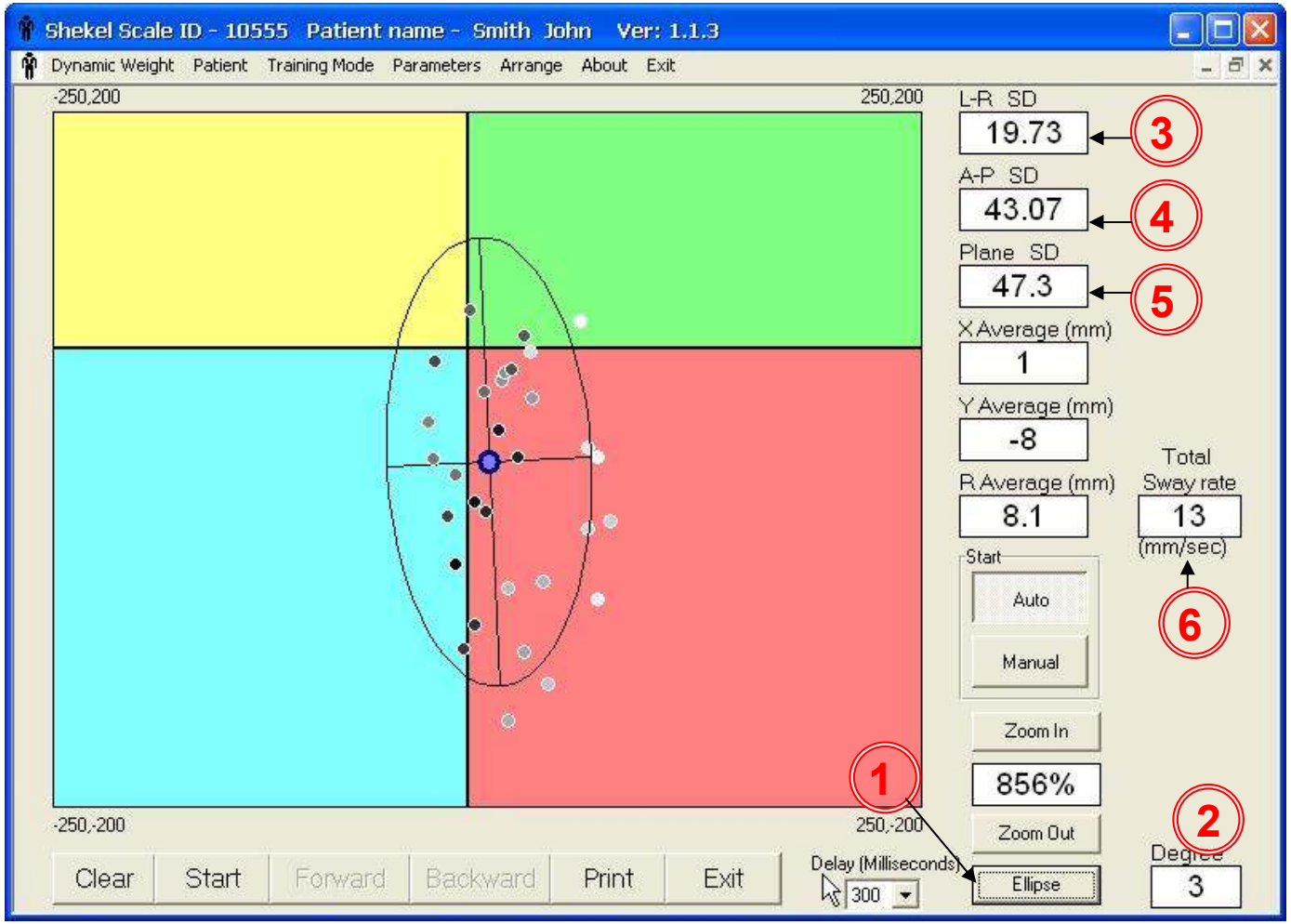

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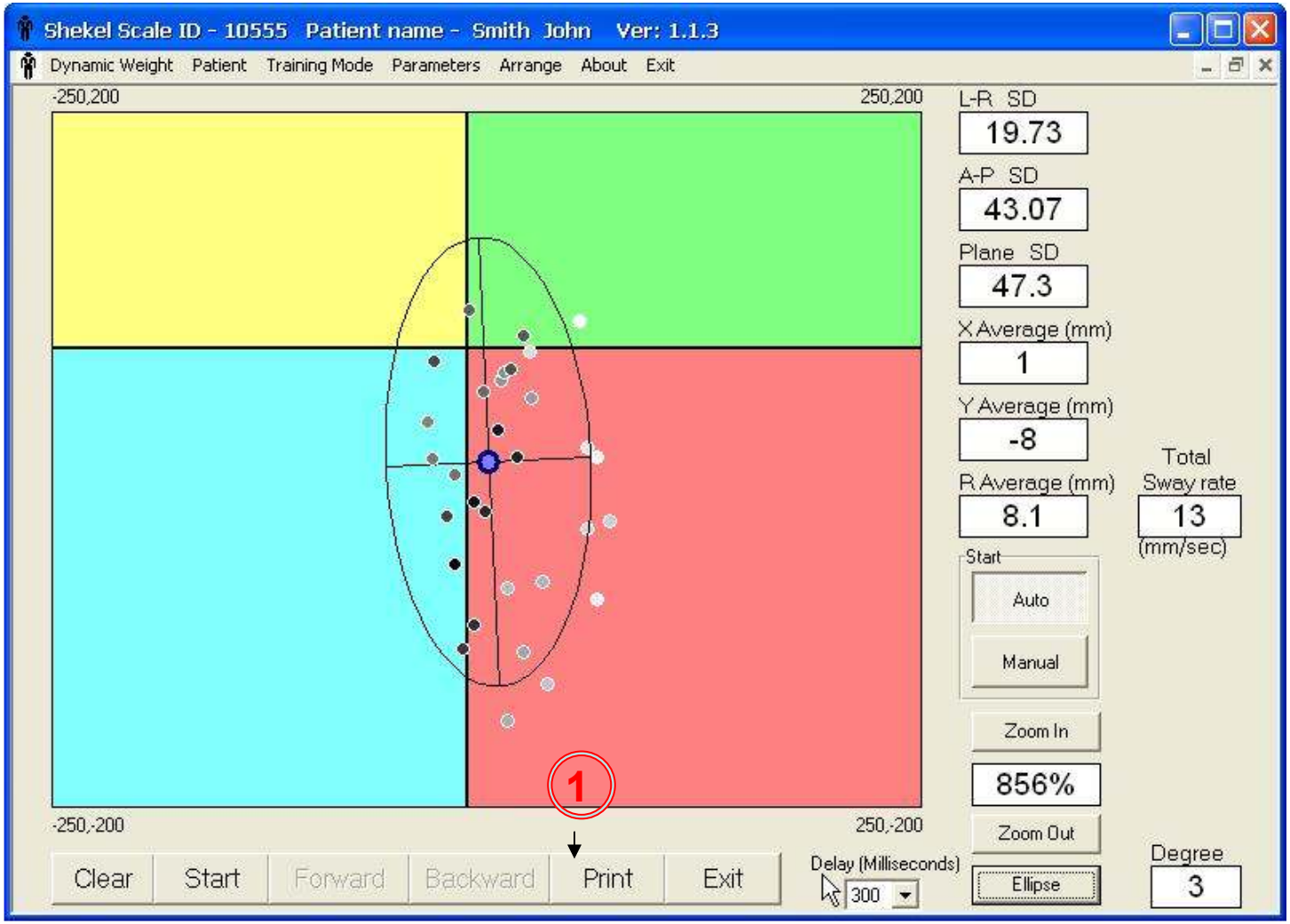
Printing – Test results

1. **Print – key [Print] to start the procedure of printing test results.**
2. **Screen “Print in Black and White” – Choose [yes] for printing in black and white and [No] for printing in color .**
3. **Screen “Print preview ?” - Choose [yes] to see the results and [No] for printing the results.**



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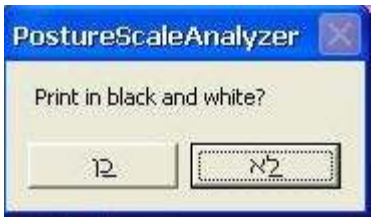

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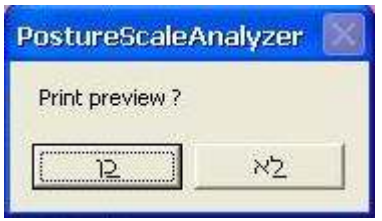
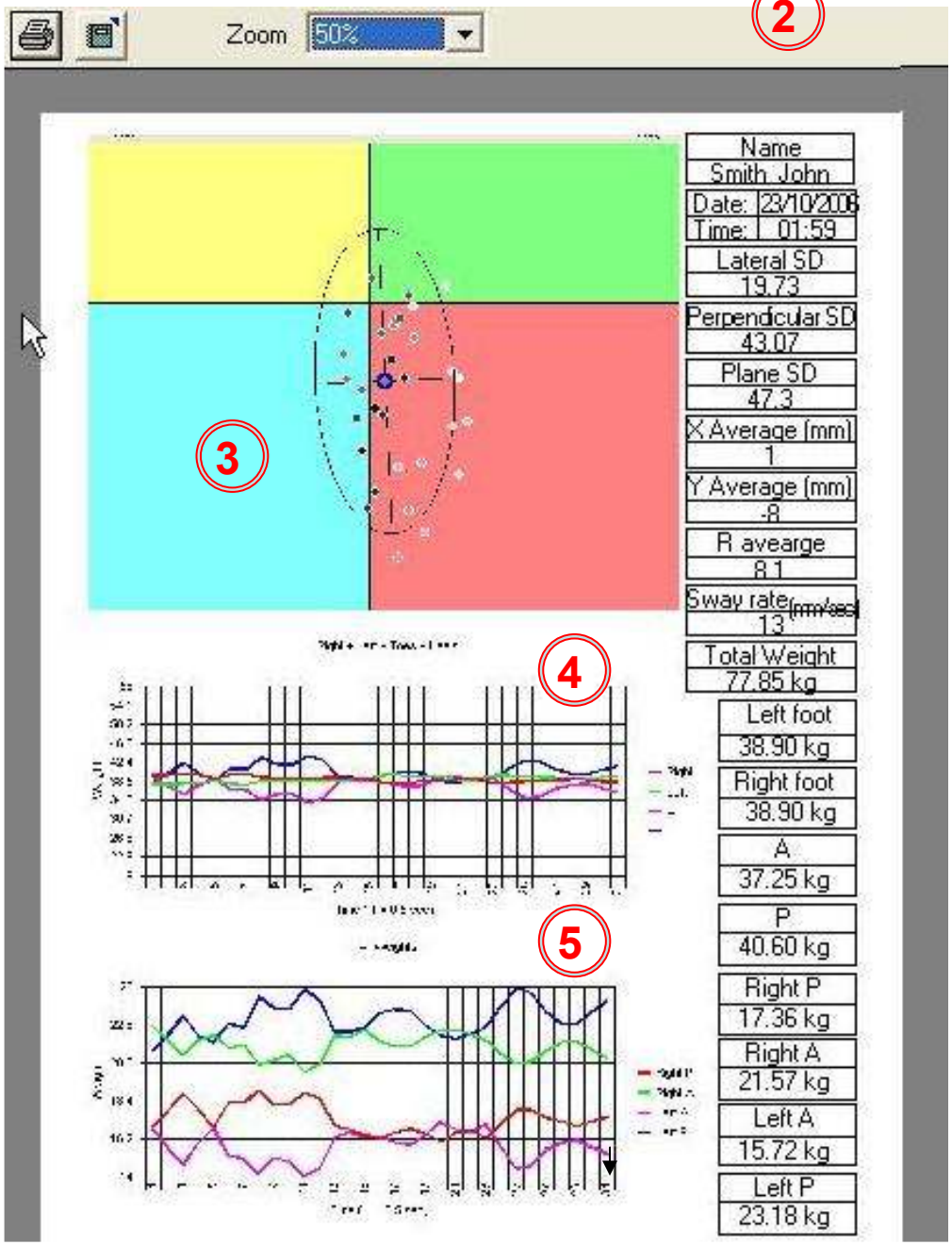
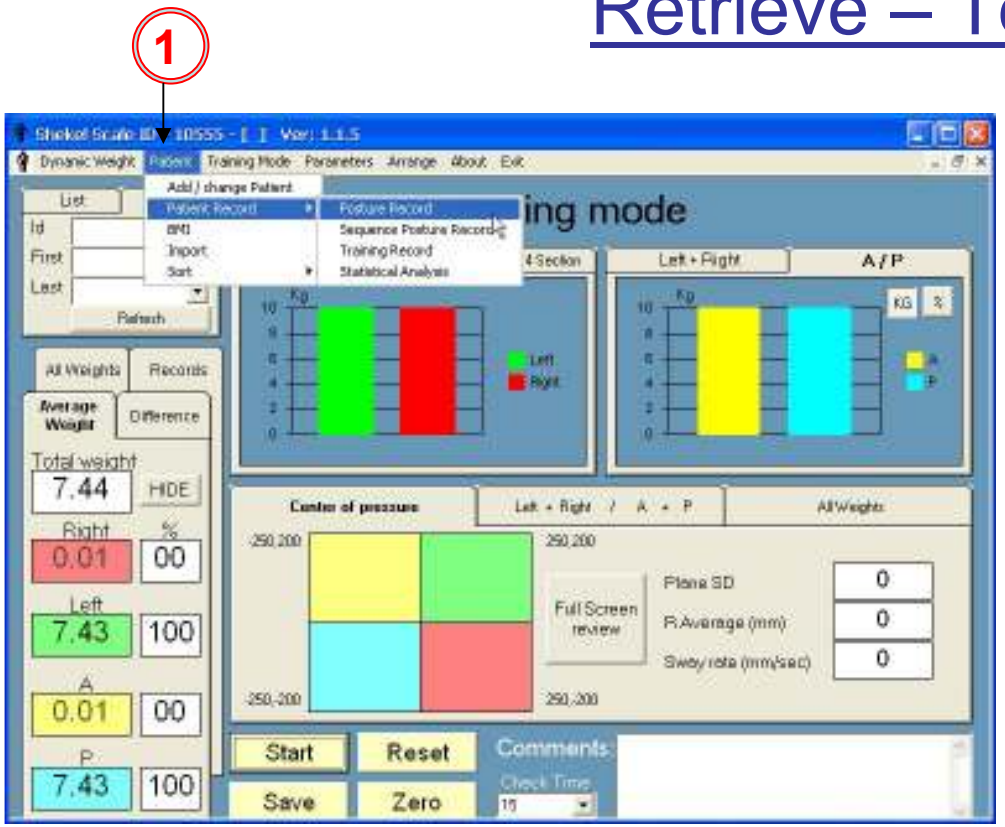


Printout – Test results



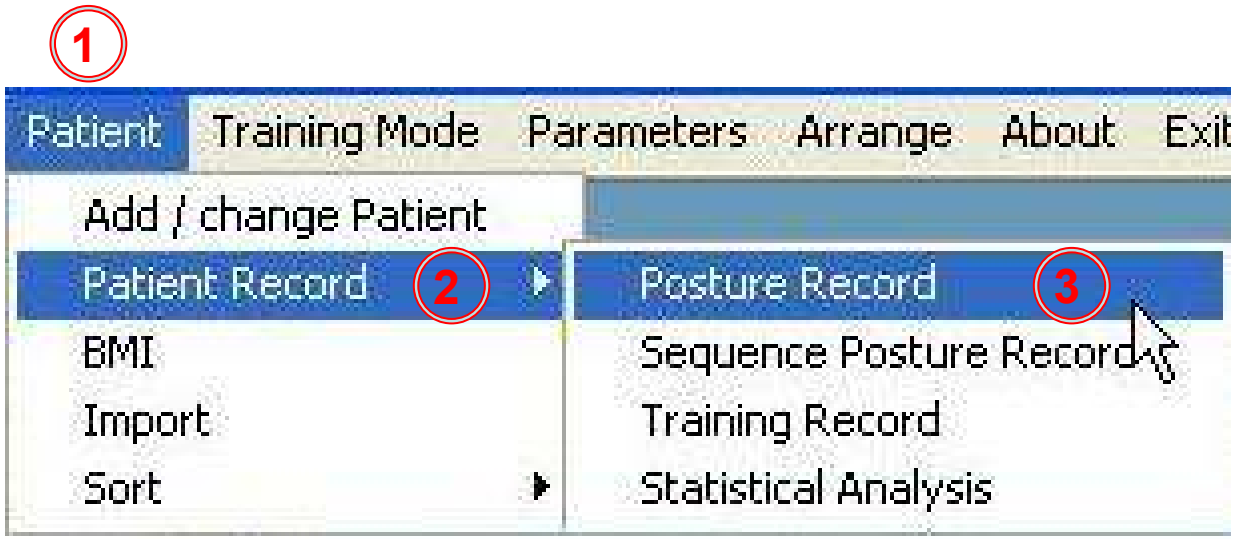
1. **Zoom – Determines the size of the printout on the screen. Choose "fit" to see full page.**
2. **Data column – Show name of patient, test time and all numerical test results.**
3. **Center of pressure graph.**
4. **Sway and weight distribution graph (left & right and A & P).**
5. **Sway and weight distribution graph:**
   (left A, left P, right A, right P).
6. **Print – Key on printer icon to print test results.**

Retrieve – Test results

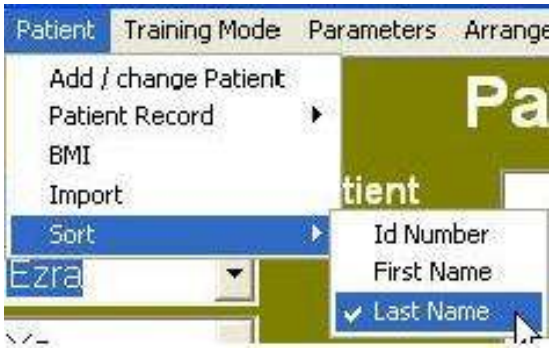


1. key [Patient] in the main menu to start retrieving test results.
2. Key [Patient record].
3. Key [Posture record].

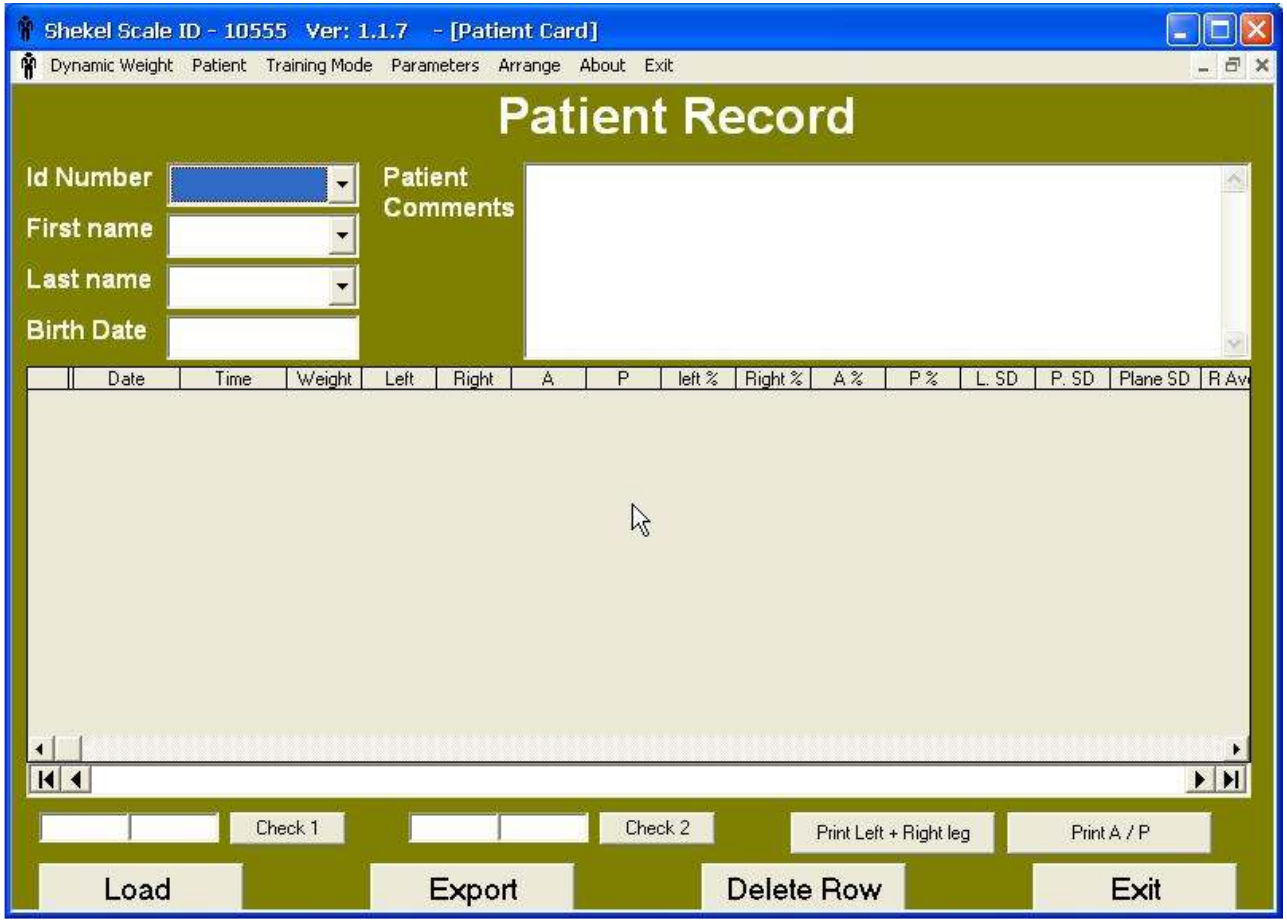
(continue to the next slide)



Retrieve – Test results (continuation)



sort the list of patients by their ID numbers, first names or last names. (last name is recommended).



Two ways for choosing the name of the patient by his ID, first name or last name.

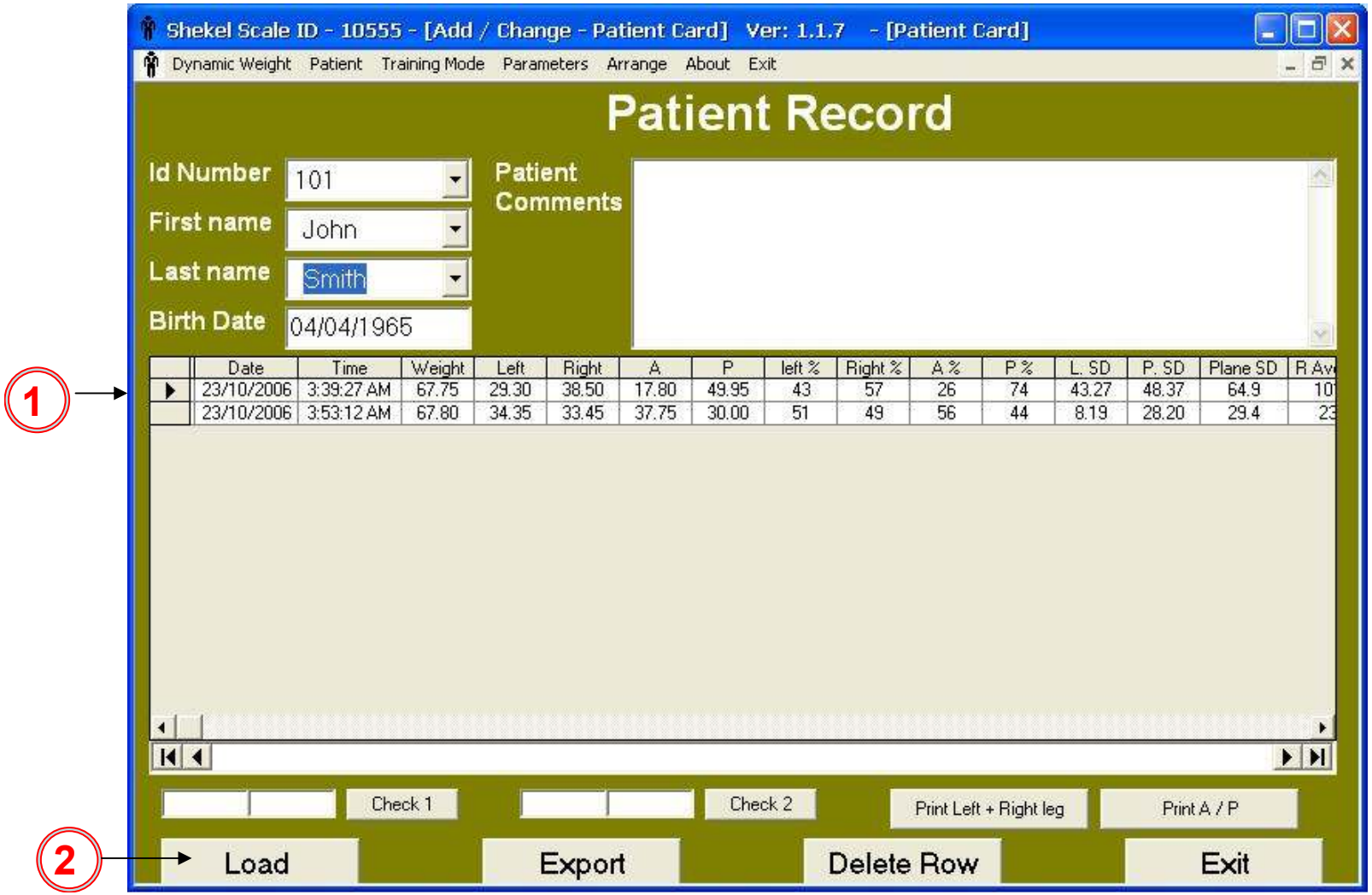
Use mouse and cursor

- **Key on the arrow next to ID, first name or last name and scroll down to the desired name.**
- **Place the cursor in the ID, first name or last name and key the first digit or letter and scroll down to the desired name.**

Retrieve – Test results (continuation)

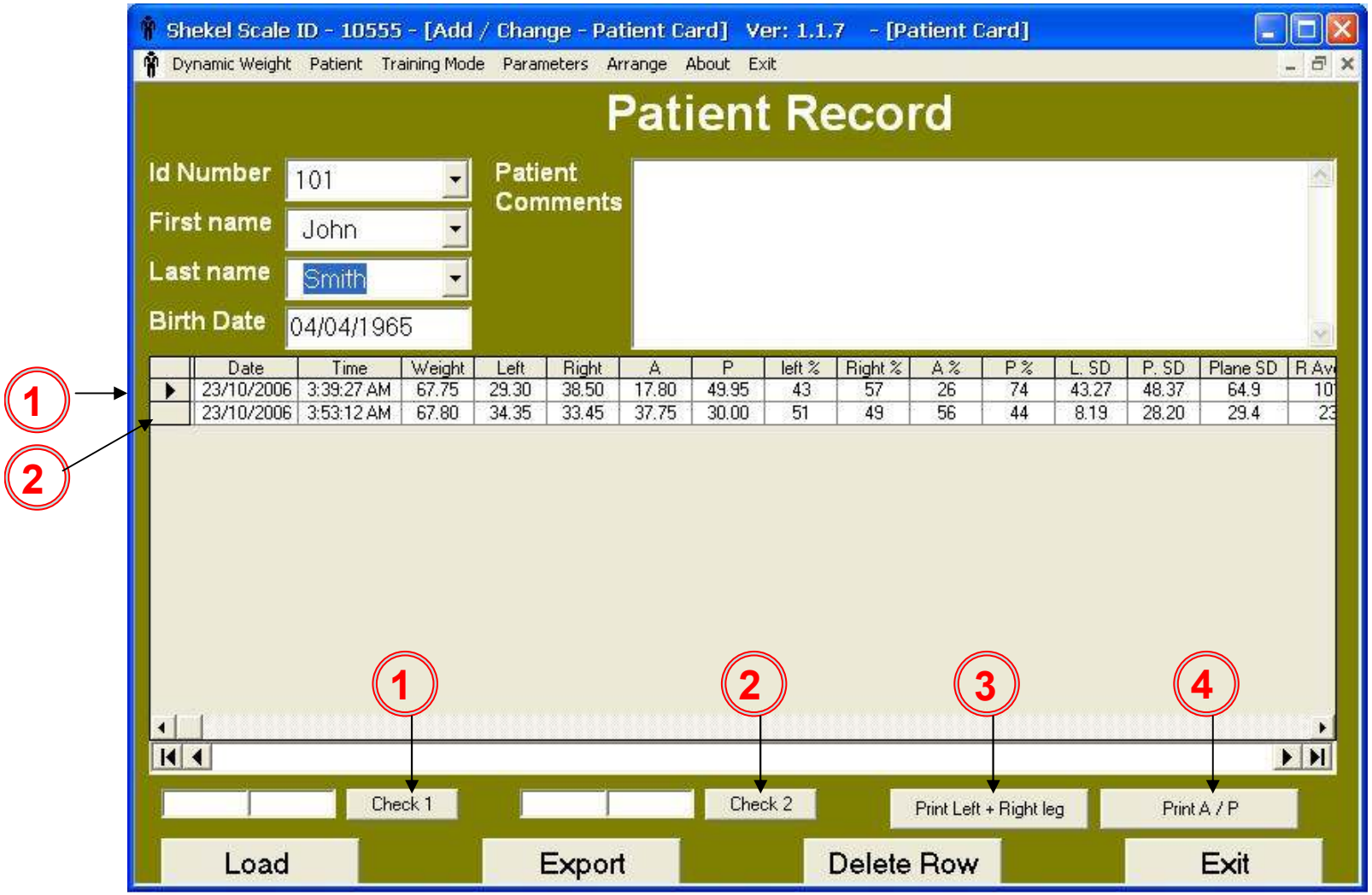
Each test is saved and identified by the date and the time of the test

- **Choose the test to retrieve by marking it with the cursor.**
- **Press [Load] to load the test. (the test results appears the same as by end of test).**



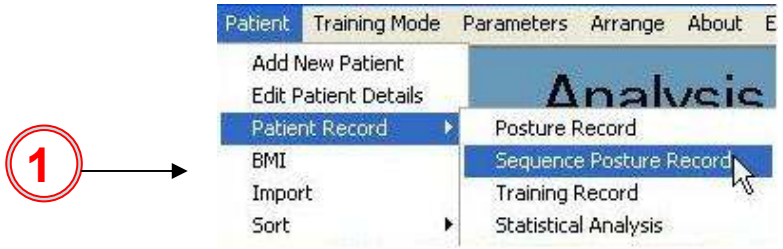
Retrieve – Comparison of two test results

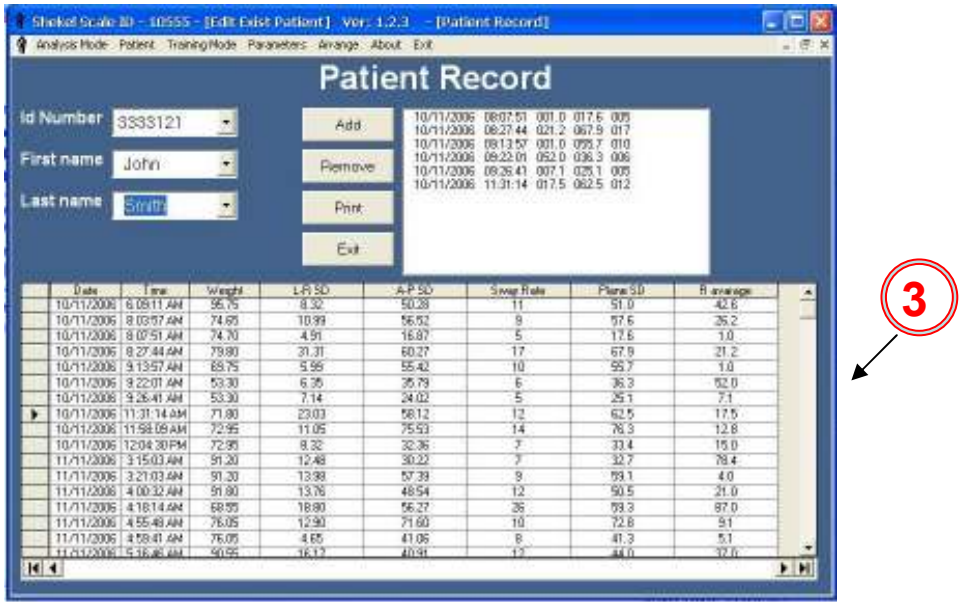
1. **Choose first test to retrieve by marking it with the cursor and then press [Check 1].**
2. **Choose second test to retrieve by marking it with the cursor and then press [Check 2].**
3. **Press [Print Left + Right leg] to preview or print left to right comparison.**
4. **Press [Print A / P] to preview or print anterior to posterior comparison.**

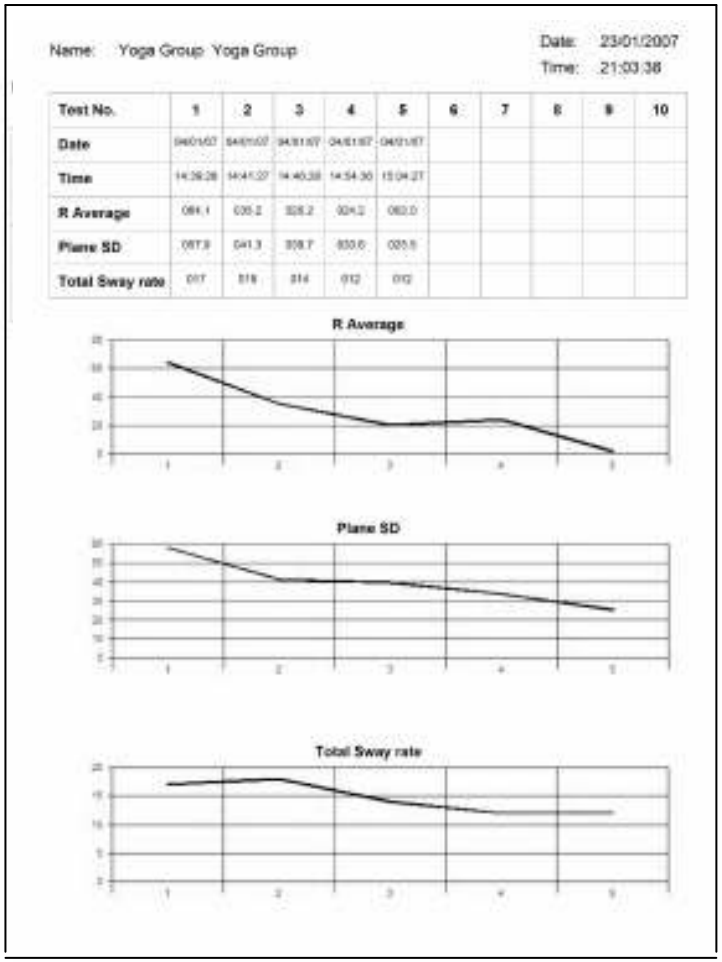


Retrieve – Sequence Posture Record

1. Press [Patient], then press [Patient record], then press [Sequence posture records].
2. Choose the name of the patient..
3. Choose the tests to retrieve one by one (max. 10 tests), either by double click on the test line or by mark the test line and click on [Add]. To remove a test from the list, mark the test and press [Remove].
4. Press [Print], to preview press [Yes] or to print press [No].
5. The report appears on the screen, with table that show the date and time and tests results of each test, and graphs that illustrate the test results.

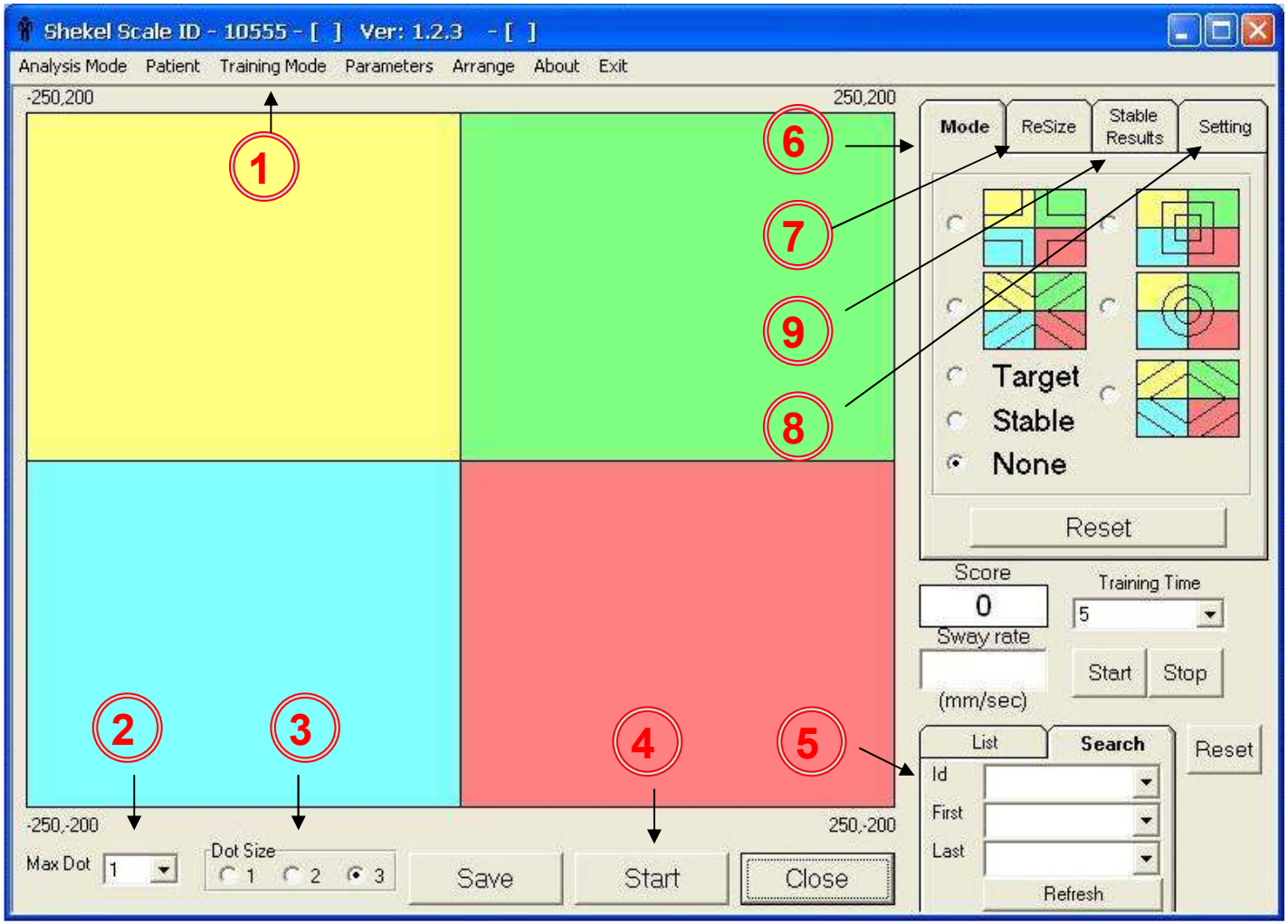






Training Mode – Main Screen

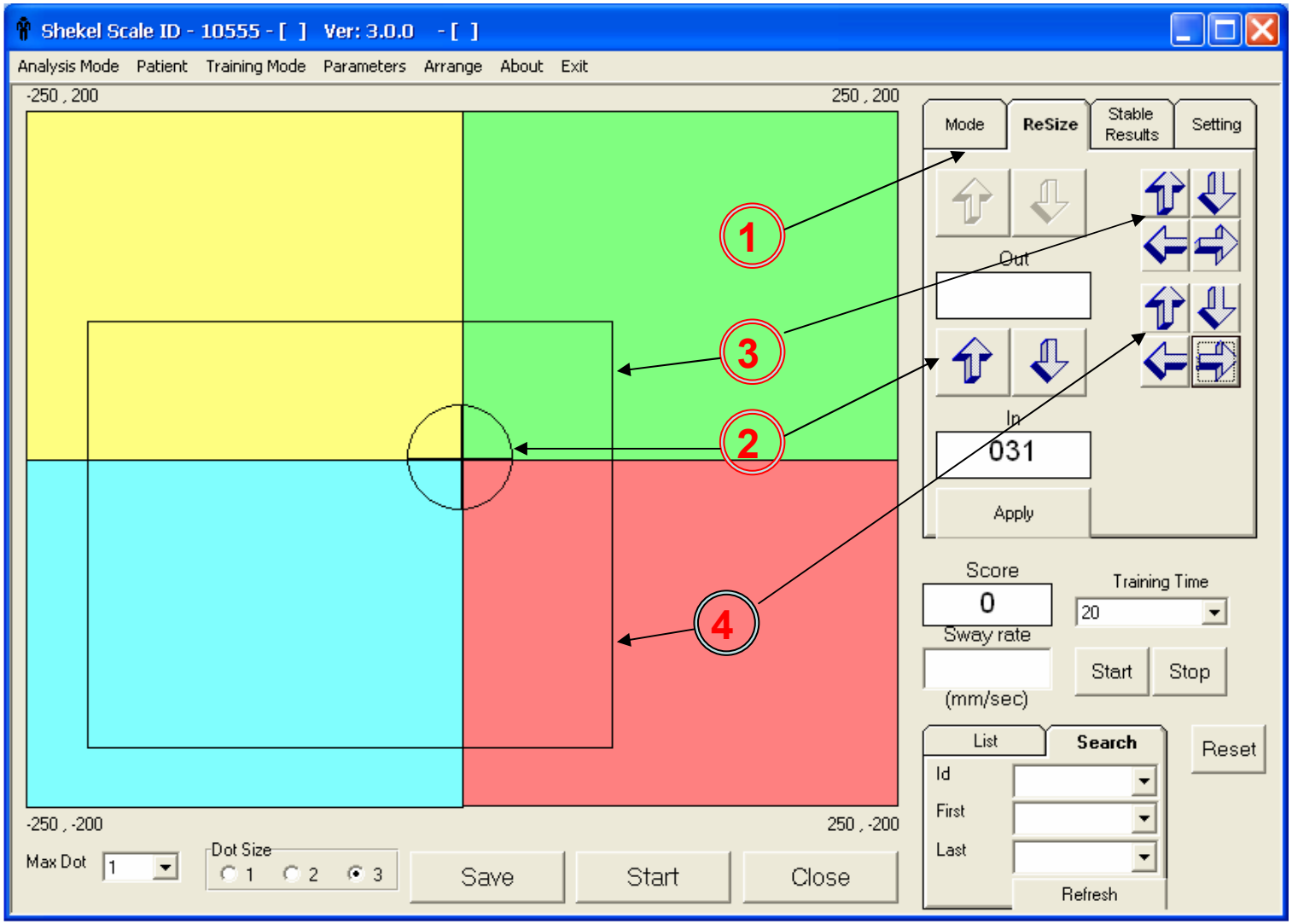
1. Press [Training mode] in the menu in the main Screen to start training..
2. Max Dot – choose the number of dots on the screen {1 (recommended) to 10 max}.
3. Dot Size – Choose the size of the dots {1=small 2=medium 3= large (recommended)}.
4. Press [Start] to activate the training mode. The dots on screen, indicates the COP of the patient.
5. Press [List] and choose the name of the patient from list.



6. Press (Mode) and choose one of 7 different patterns for training.
7. Press (Resize) and set the dimensions of the pattern for the level of difficulty of training.
8. Press (Setting) and set the optional Line and Circle parameters.
9. Press (Stable Results) and view the results of training of Stable mode.

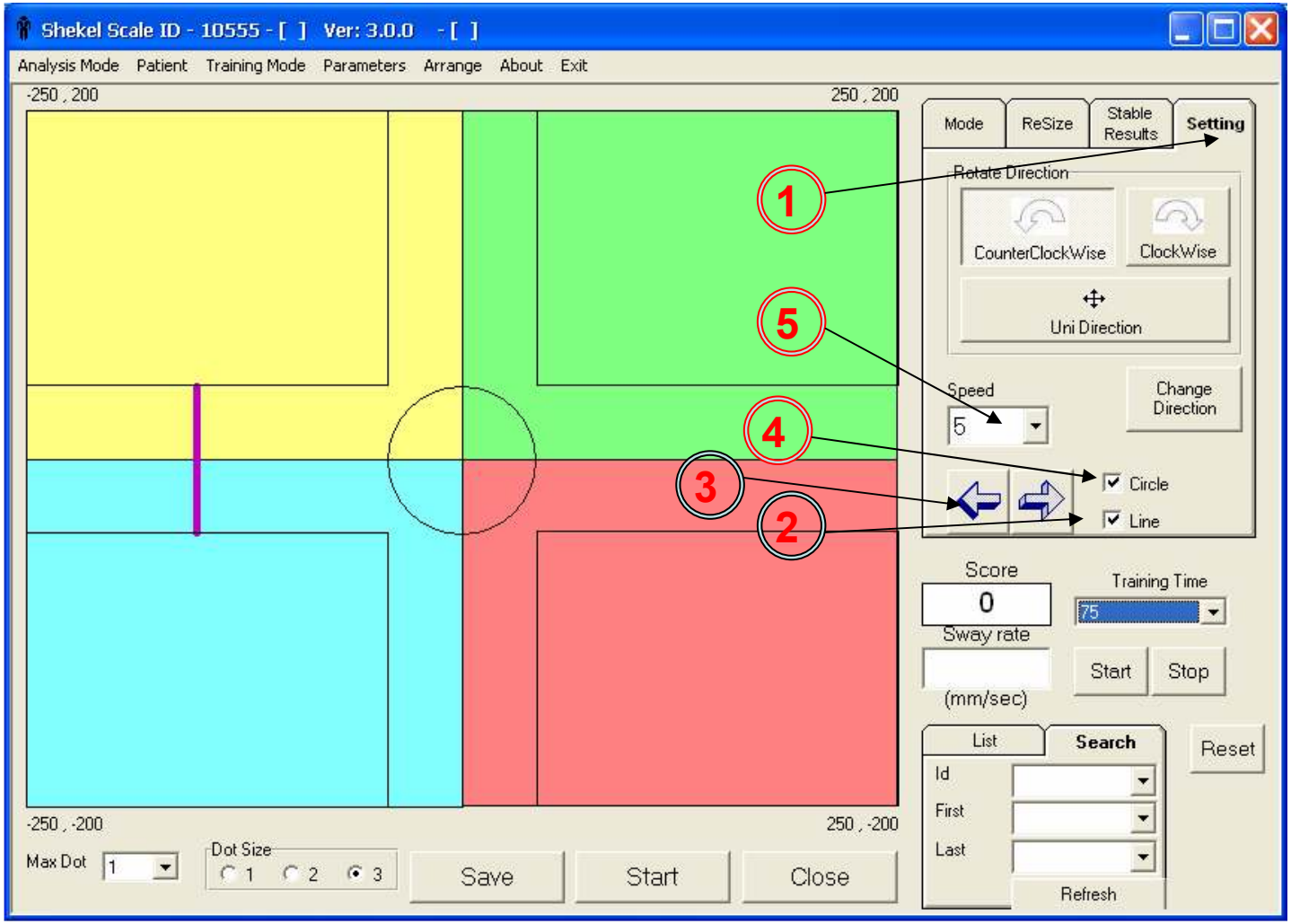
Training Mode – Resize Screen

1. **Press [Resize] in the main Screen of Training Mode.**
2. **Use Up & Down Arrows for setting the path width and/or the diameter of the circle.**
3. **Use Up & Down and Left & Right Arrows for setting the width and height of the frame.**
4. **Use Up & Down and Left & Right Arrows for setting the position of the frame on screen.**



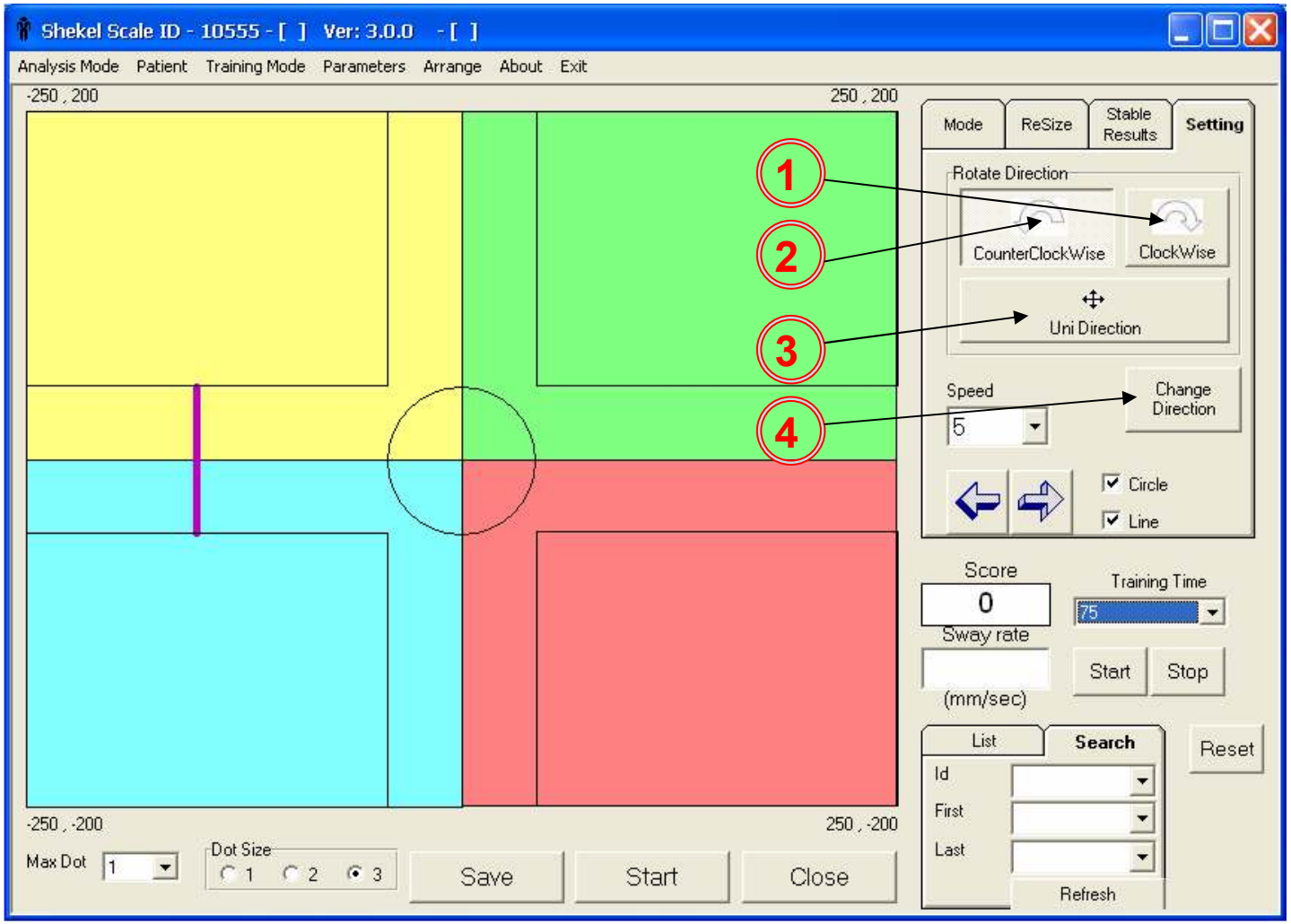
Training Mode – Setting Screen

1. **Press [Setting] in the main Screen of Training Mode. (Example – TARGET Pattern)**
2. **Mark Line box for adding the limit line (purple line). To determine the limit of movement of COP.**
3. **Use Left & Right Arrows for locating the purple line.**
4. **Mark Circle box for adding the circle that lead the patient COP.**
5. **Click [Speed] arrow and determine the Circle speed (1=slow, 10=fast).**



Training Mode – Setting Screen (continue)

1. **Press [Clockwise] to rotate the purple line clockwise direction.**
2. **Press [Counterclockwise] to rotate the purple line counterclockwise direction.**
3. **Press [Uni-Direction] for movement of the Circle between the center and purple line.**
4. **Press [Change Direction] to fix the position of the purple line.**



Training Mode – Setting Screen and start training

1. **Click [Training Time] arrow and determine the time for the training in Seconds (max 480 sec).**
2. **Patient should bring the COP into the circle, then Press [Start] to start the training session.**
3. **Press [Stop] to stop the training session.**
4. **Press [Reset] to return to last setting.**